217/782-2113

CONSTRUCTION PERMIT - PSD APPROVAL
NSPS-NESHAP EMISSION UNITS

PERMITTEE

Prairie State Generating Company, LLC
Attn: Dianna Tickner, President
701 Market Street, Suite 781
St. Louis, Missouri 63010

Application No.: 01100065 I.D. No.: 189808AAB
Applicant's Designation: Date Received: October 19,2001
Subject: Electricity Generation Facility
Date Issued: April 28, 2005
Location: Southwest corner of Marigold Road, off of Washington County Highway 12, approximately 5 miles east northeast of Marissa

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission sources and air pollution control equipment consisting of a mine-mouth coal-fired power plant with two power boilers, cooling towers, fuel handling and storage, limestone handling and storage, ash handling and storage, auxiliary gas-fired boiler, and ancillary operations, as described in the above referenced application. This Permit is granted based upon and subject to the findings and conditions that follow.

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the plant, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, the federal regulations promulgated thereunder at 40 CFR 52.21 for ~~Prevention of Significant Deterioration of Air Quality (PSD)~~the PSD program, and a Delegation of Authority agreement between the United States Environmental Protection Agency (USEPA) and the Illinois EPA for the administration of the PSD Program. This approval becomes effective ~~in accordance with~~ on June 8, 2005, as authorized by the provisions of 40 CFR 124.15~~ and may be appealed~~, unless a petition for review is filed in accordance with provisions of 40 CFR 124.19. For purposes of any appeal petition that may be filed, the 30 day period for requesting review begins on May 9, 2005. This approval is based upon the findings that follow. This approval is subject to the following conditions. This approval is also subject to the general requirement that the plant be developed and operated consistent with the specifications and data included in the application and any significant departure from the terms expressed in the application, if not otherwise authorized by this permit, must receive prior written authorization from the Illinois EPA.

If you have any questions on this permit, please call Shashi Shah at 217/782-2113 (TDD 217/782-9143).

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:SRS:jar

cc: Region 3
USEPA Region V

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INTRODUCTION: FINDINGS

1a. Prairie State Generating Company, LLC (Prairie State) has requested a permit for a mine-mouth coal fired power plant with a nominal capacity of 1500 MW_e net. The proposed plant would have two identical pulverized coal boilers equipped with low-NO_x burners, selective catalytic reduction (SCR), electrostatic precipitator (ESP), wet flue gas desulfurization (WFGD) and wet electrostatic precipitator (WESP). Other emission units would include: fuel handling and storage, ash handling and storage, limestone handling and storage, cooling towers, and an auxiliary boiler at the power plant facility; coal handling operations at the new underground coal mine; and ancillary operations.

b. The boilers, which each would have a maximum rated capacity of about 7,450 million Btu/hour, would be fired on coal as their primary fuel, with natural gas used as the startup fuel. The boilers would ~~generally~~ be designed for raw Illinois No. 6 coal from a new underground mine to be developed adjacent to the boiler complex. The design coal supply would nominally have 4.0 percent sulfur by weight and 8,780 Btu per pound as received at the power plant facility, following routine preparation to separate rock from the coal fuel. ~~The sulfur content of the design fuel is equivalent to an uncontrolled sulfur dioxide emission rate of 9.1 pounds per million Btu heat input.~~ As part of its review of the application, the Illinois EPA considered requiring washing of ~~the~~ this coal as a means to specifically reduce its sulfur content. The Illinois EPA determined that for ~~the proposed~~ mine-mouth ~~plant~~coal, any benefits of coal washing would be outweighed by the adverse environmental, energy and economic impacts associated with ~~the~~ coal washing ~~facility~~ and storage of associated coal waste. To address potential interruptions in the mine-mouth coal supply and facilitate reliable operation of the power plant, the boilers would also be allowed to use Illinois No. 6 coal and Illinois No. 5 coal (which is similar to the mine-mouth coal) from other mines. Because the source(s) of this coal are not specified, e.g., the coal could be obtained from mines that already have a washing facility and that are some distance from the plant, the analyses and evaluation performed for coal washing at the proposed plant are not applicable for the use of such non-mine-mouth coals. Accordingly, coal from the boilers, other than mine-mouth coal, is required to be washed.

2. The plant would be located in rural Washington County. The site is in an area that is currently designated attainment for all criteria pollutants.

3. The proposed plant is a major source under the PSD rules. This is because the boilers would have potential annual emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), particulate matter (PM) as PM_{10}, carbon monoxide (CO), volatile organic material (VOM) and sulfuric acid mist, that are in excess of 100 tons. (Refer to Table I for the potential emissions of the boilers.)

4. The proposed plant is a major source for emissions of hazardous air pollutants (HAPs). The potential emissions from the plant will be greater than 10 tons of an individual HAP, i.e., hydrogen chloride and

hydrogen fluoride, and more than 25 tons in aggregate for a combination of HAPs. Therefore, the plant is being subjected to review under Section 112(g) of the federal Clean Air Act.

5a. After reviewing the materials submitted by Prairie State, the Illinois EPA has determined that the project will (i) comply with applicable Pollution Control Board (Board) emission standards, (ii) comply with applicable federal emission standards, (iii) utilize Best Available Control Technology (BACT) on emissions as required by PSD, and (iv) utilize Maximum Achievable Control Technology (MACT) for emissions of HAPs as required by Section 112(g) of the Clean Air Act.

b. The determinations of BACT and MACT made by the Illinois EPA for the proposed plant are the control technology determinations contained in the permit conditions for specific emission units.

c. ~~Although~~ Because USEPA has ~~proposed a~~ not adopted MACT standards for utility boilers at ~~coal-fired~~ power plants pursuant to ~~Section 112(d) of~~ Section 112 of the Clean Air Act, this~~e~~ permit contains a case-by-case determination of MACT pursuant to Section 112(g) of the Clean Air Act. This ~~to~~ addresses the possibility that such standards are ultimately required but are not yet adopted by USEPA or are not effective when the plant would begin to operate, so that MACT must be established pursuant to Section 112(g) of the Clean Air Act. For this purpose, limits related to HAP~~s~~ emissions constitute MACT. As limits are not present for specific HAPs, the MACT determination relies upon the limits established for other pollutants to also restrict emissions of ~~hazardous air pollutants~~ HAPs for which individual limits are not set.

6a. The air quality analysis submitted by Prairie State and reviewed by the Illinois EPA shows that the proposed project will not cause or contribute to violations of the National ~~ambient~~ Ambient ~~air~~ Air ~~quality~~ Quality ~~standard~~ Standard (NAAQS) for ~~NO_x~~ NO_2, SO_2, PM/PM_{10}, and CO. The air quality analysis shows compliance with the Class II allowable increment levels established under the PSD regulations.

b. Prairie State has also evaluated the impact of the proposed plant on air quality and visibility in the Wilderness Area at the Mingo Wildlife Refuge, which is located approximately 140 kilometers southwest of the proposed plant. This analysis shows that the plant will not violate the Class I air quality increments applicable in the Mingo Wilderness Area. The Illinois EPA also determined based on the visibility assessment submitted by Prairie State that the proposed plant would not have an adverse impact on visibility values in the Mingo Class I Area. ~~Only one day out of the three years of meteorological data that were modeled a predicted change in extinction coefficient of greater than 10% (maximum 12.1%). Copies of these analyses were provided to the Federal Land Manager for the Mingo Wildlife Refuge and copies of comments submitted by the Federal Land Manager prior to the start of the public comment period were included in the material placed in the public repository of documents developed as part of the public comment period.~~

i. Under the PSD rules, the Illinois EPA must determine whether emissions from this plant will have an adverse impact on visibility and other air quality related values at Class I areas. Prairie State submitted a visibility assessment using the guidance prepared by the *Federal Land Managers' Air Quality Related Values Work Group* (FLAG), with adjustments that the Illinois EPA determined were appropriate for the Mingo Area. This assessment showed when taking into account weather phenomena (rain, snow, fog, drizzle, etc.) on natural background light extinction and visitor use, the plant would not have an adverse impact on visibility. Only one day out of the three years of meteorological data used in the modeling predicted a change in the extinction coefficient of greater than 10%, i.e., a maximum 12.1% change. Copies of these analyses were provided to the Federal Land Manager for the Mingo Area, i.e., the United States Fish and Wildlife Service (USFWS) and the USFWS subsequently submitted comments indicating that it believed that the project would have an adverse impact on air quality related values at the Mingo Area. ~~(A copy of these comments was included in the materials placed in the public repository of documents developed as part of the public comment period.)~~

ii. Having considered the USFWS comments and other information in the record, Illinois EPA finds that this project will not have an adverse impact on the Mingo Area. ~~T~~While the ~~FLAG document is guidance and cannot be afforded the same weight as a promulgated regulation, but rather, the weight typically provided to a guidance document. Accordingly, the~~ Illinois EPA considered the FLAG guidance, ~~but~~ the Illinois EPA recognized that the FLAG guidance must be applied to include the effects of weather phenomena on natural background light extinction and the effect of visitor use of the Class I area. This finding is consistent with the FLAG guidance, which notes that adverse impact on visibility is defined in federal visibility protection regulations (40 CFR 51.300, *et seq.*, Section 52.27) as "visibility impairment, which interferes with the management, protection, preservation or enjoyment of the visitor's visual experience of the ~~F~~federal ~~c~~Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency, and time of visibility impairment, and how these factors correlate with: (1) times of visitor use of the ~~F~~federal ~~c~~Class I area, and (2) the frequency and timing of natural conditions that reduce visibility."

iii. This permit contains requirements for the coal-fired boilers that were not present in the draft permit that reduce the emissions and air quality impacts of the plant, which were not considered as part of the USFWS' original evaluation. These requirements include an additional limit for the SO_2 emissions in terms of control efficiency and a more stringent limit for NO_x emissions (Conditions 2.1.2(b)(ii)(B) and (b)(iii)). This permit also includes certain requirements proposed by Prairie State specifically to ameliorate any potential impact on air quality

related values at the Mingo Area (Conditions 1.1.~~10~~9, 2.1.7(~~b~~a)(ii), and 2.1.~~16~~7(~~a~~b)(ii)). Most notably, Prairie State will retire 25 percent more SO_2 allowances than required to comply with the Acid Rain program, in proportion to actual emissions, until (1) implementation of additional cap and trade federal regulation or legislation (such as the Clean Air Interstate Rule ~~or Clear Skies~~); or (2) other new federal or state regulations limiting SO_2 emissions from power plants are adopted and take effect. This commitment goes significantly beyond the requirements of the federal Acid Rain program, which already requires ~~that~~ Prairie State to obtain and retire SO_2 allowances on a one-for-one basis for actual emissions of SO_2 and acts to prevent any net increase in SO_2 emissions to the atmosphere as a result of the operation of the plant. Nor did the USFWS original evaluation include a consideration of other related developments that affect emissions of Illinois' coal-fired power plants, i.e., the development of a Consent Decree to specifically address emissions of Dynegy's plants, including the Baldwin plant, and the USEPA's actual adoption of the Clean Air Interstate Rule.

c. The Illinois EPA has evaluated the impact of the proposed plant on ozone air quality. The Illinois EPA's evaluation concludes that the plant will not interfere with improvements in ozone air quality and attainment of the ~~1-hour~~ ozone standard in the St. Louis area.

7. The Illinois EPA has determined that the proposed plant complies with all applicable ~~Illinois Pollution Control~~ Board Air Pollution Control Regulations; the federal ~~Prevention of Significant Deterioration of Air Quality Regulations (~~rules for PSD~~)~~, 40 CFR 52.21; applicable federal New Source Performance Standards (NSPS), 40 CFR 60; and Section 112(g) of the Clean Air Act and applicable federal regulations thereunder~~;~~, National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, Subpart B.

8. In conjunction with the issuance of this ~~construction~~ permit, the Illinois EPA ~~is~~ has also ~~issuing~~ issued an Acid Rain permit for the proposed coal boilers, to address requirements of the federal Acid Rain program. These boilers would be affected units under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act. As affected units under the Acid Rain Program, Prairie State must hold SO_2 allowances each year for the actual emissions of SO_2 from the boilers. The boilers are also subject to emissions monitoring requirements pursuant to 40 CFR Part 75. As the Acid Rain permit relates to the Acid Rain Program, it is not considered part of the PSD approval.

9. In conjunction with the issuance of this ~~construction~~ permit, the Illinois EPA is also issuing a Budget Permit for the proposed coal boilers, to address requirements of the NO_x Trading Program. As the Budget Permit relates to the NO_x Trading Program, it is not considered part of the PSD approval.

10. A copy of the application, the project summary prepared by the Illinois EPA, a draft of this ~~construction~~ permit, and a draft of the Acid Rain and Budget permits were placed in a nearby public repository, and the public was given notice and an opportunity to examine this material and to participate in a public hearing and to submit comments on these matters.

INTRODUCTION: IDENTIFICATION OF SIGNIFICANT EMISSIONS UNITS

Unit Number	Description	Emission Control Measures
1	Boiler 1 – Pulverized Coal Boiler	Good Combustion Practices, Low NO_x Burners, Selective Catalytic Reduction, Electrostatic Precipitator, Wet Flue Gas Desulfurization (Scrubber), and Wet Electrostatic Precipitator
	Boiler 2 - Pulverized Coal Boiler	Good Combustion Practices, Low NO_x Burners, Selective Catalytic Reduction, Electrostatic Precipitator, Wet Flue Gas Desulfurization (Scrubber), and Wet Electrostatic Precipitator
2	Fuel and Other Bulk Material Handling, Processing and Storage Operations	Baghouses and Dust Control Measures (application of water or dust suppressant, enclosures or compaction, and filtration)
3	Cooling Towers	High-Efficiency Drift Eliminators
4	Auxiliary Boiler - Natural Gas Fired Boiler	Low-NO_x Burners, Limited Operations, Proper Combustion, Operation and Maintenance
5	Roadways and Other Sources of Fugitive Dust	Paving and Dust Control Measures (application of water or dust suppressions and dust collection)

SECTION 1: SOURCE-WIDE PERMIT CONDITIONS

CONDITION 1.1: EFFECT OF PERMIT

a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.

b. In particular, this permit does not relieve the Permittee from the responsibility to carry out practices during the construction and operation of the plant, such as application of water or dust suppressant sprays to unpaved traffic areas, as necessary to minimize fugitive dust and prevent an air pollution nuisance from fugitive dust, as prohibited by 35 IAC 201.141.

CONDITION 1.2: VALIDITY OF PERMIT AND COMMENCEMENT OF CONSTRUCTION

a. This permit shall become invalid as applied to the plant and each boiler at the plant if construction is not commenced within 18 months of the PSD approval ~~after this permit becomes~~ becoming effective, if construction of a boiler is discontinued for a period of 18 months or more, or if construction of a boiler is not completed within a reasonable period of time~~, pursuant to 40 CFR 52.21(r)(2) and 40 CFR 63.43(g)(41)~~. The Illinois EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This condition supersedes Standard Condition 1 of the permit. (See Attachment 2)

b. For purposes of the above provisions, the definitions of "construction" and "commence" at 40 CFR 52.21 (b) (8) and (9) shall apply, which requires that a source must enter into a binding agreement for on-site construction or begin actual on-site construction. (See also the definition of "begin actual construction," 40 CFR 52.21 (b) (11)).

CONDITION 1.3: FUEL SUPPLY

a. ~~i.~~ The power plant shall be developed and operate as a mine-mouth plant~~,~~ ~~or operate with washed Illinois No. 5 or No. 6 coal from off-site mine(s).~~ ~~using coal delivered by conveyor belt directly from the mining facility or facilities as the principal source of coal for the two coal boilers. For this purpose, such coal shall make up at least 95 percent of the coal supply to the boilers except during temporary interruption in the operation of the mining facility.~~

Note: Acceptance of any coal by rail or truck would require a separate state construction permit, as this permit does not address receiving of coal by rail~~road~~ or truck~~s~~. ~~Except as provided below,~~ ~~t~~The proposed ~~U~~use of unwashed coal delivered by rail or truck by the plant ~~as the principal source of coal~~ would require approval under the PSD rules. As part of such approval, the determination of BACT for the coal boilers would be subject to review and possible revision as needed to address the new source(s) of coal and requirements for coal

washing as related to control of SO_2 emissions~~for SO_2 control efficiency~~.

i. ~~If the plant is operating a~~As a mine-mouth facility, the plant shall use coal delivered by conveyor belt directly from the mining facility or facilities ~~as the principal source of coal for~~in the two coal-fired boilers~~. For this purpose, such coal shall constitute at least 99.5 percent of the fuel supply to the boilers (no more than 0.5 percent total of unwashed coal and solid fuels other than coal in the fuel supply to the boilers)~~, except during extended interruptions in the mine-mouth coal supply.

ii. During an extended interruption in the mine-mouth coal supply, the plant may use washed Illinois No. 5 and No. 6 coal from off-site, as further provided below:

A. For an incident to be considered an extended interruption in the coal supply to the boilers, the interruption must be caused by events or circumstances that could not have been reasonably prevented by the Permittee, its contractors, or any entity controlled by the Permittee, and the interruption in the coal supply must be of longer duration than the ~~breaks~~ interruptions that routinely occur in the operation of mining facilities (which the Permittee can address by maintaining a reserve supply of coal at the plant)~~, and the interruption must be caused by events or circumstances that could not have been reasonably prevented by the Permittee~~.

~~ii. If the plant is operating with both "mine-mouth coal" (coal supplied by conveyor belt) and washed coal from off-site mine(s), (1) the amount of any unwashed coal from an off-site mine in the fuel supply to the boilers shall be no more than 0.5 percent of the mine-mouth coal supplied to the boilers except during extended interruptions of the mine-mouth or washed coal supply, and (2) the amount of off-site unwashed coal and other solid fuels in the fuel supply to the boilers shall not exceed 0.5 percent of the total amount of mine mouth and washed coal supplied to the boilers.~~

~~iii~~B. To continue to qualify for the exception provided for extended interruptions in the mine-mouth coal supply, the Permittee must be undertaking a program to restore the coal supply that has experienced the interruption, ~~either the mine-mouth or washed coal supply as appropriate,~~ in a reasonable period of time that is consistent with the nature of the efforts needed to restore such coal supply. In the event that only a partial interruption occurs or the operation of the mining facility is partially restored, the exception for an extended interruption in the coal supply only applies to the portion of the coal supply that is affected.

~~iv. During an extended interruption of the coal supply to the boilers, the amount of any solid fuels other than coal in the fuel supply to the boilers shall not exceed 0.5 percent of the total coal supply to the boilers The usage of solid fuels other than coal shall also be consistent with the usage of such fuels prior to the interruption, i.e., the Permittee shall not introduce any such fuels that were not previously being used, into the fuel supply to the boilers or significantly increase the amounts of such fuels that were previously being used above past levels.~~

C. The Permittee shall notify the Illinois EPA prior to using coal from off-site. This notification shall include a detailed description of the nature of the anticipated interruption in the mine-mouth coal supply and document why it qualifies as an extended interruption. This notification shall be submitted 15 days before beginning to use off-site coal or otherwise as soon as it is practicable to do so. Thereafter, the Permittee shall submit periodic progress reports on a schedule as specified by the Illinois EPA.

CONDITION 1.4: GENERAL PROVISIONS FOR A MAJOR SOURCE OF HAZARDOUS AIR POLLUTANTS (HAPS)

a. As the plant is a new major source of ~~hazardous air pollutants (~~HAPs~~)~~ for purposes of Section 112~~(g)~~ of the Clean Air Act, the Permittee shall comply with all applicable requirements contained in 40 CFR Part 63, Subpart A~~, pursuant to 40 CFR 63.43(g)(2)(iv)~~. In particular, for the various HAP emission units at the source, the Permittee shall comply with the following applicable requirements of 40 CFR 63 Subpart A, related to startup, shutdown, and malfunction, as defined at 40 CFR 63.2:

i. The Permittee shall at all times, including periods of startup, shutdown, and malfunction as defined at 40 CFR 63.2, operate and maintain emission units at the source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions to the levels required by the relevant standards, i.e., meet the emission standard(s) or comply with the applicable Startup, Shutdown, and Malfunction Plan (Plan), as required below. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Illinois EPA and USEPA, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the Plan), review of operation and maintenance records, and inspection of the unit. [40 CFR 63.6(e)(1)(i)]

ii. The Permittee shall correct malfunctions as soon as practicable after their occurrence in accordance with the applicable Plan. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, the Permittee shall comply by

minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices. [40 CFR 63.6(e)(1)(ii)]

iii. These operation and maintenance requirements, which are established pursuant to Section 112 of the Clean Air Act, are enforceable independent of applicable emissions limitations and other applicable requirements. [40 CFR 63.6(e)(1)(iii)]

b. The Permittee shall develop, implement, and maintain written Startup, Shutdown, and Malfunction Plans (Plans) that describe, in detail, procedures for operating and maintaining the various emission units at the plant during periods of startup, shutdown, and malfunction and a program of corrective action for a malfunctioning process, and air pollution control and monitoring equipment used to comply with the relevant emission standards. These Plans shall be developed to satisfy the purposes set forth in 40 CFR 63.6(e)(3)(i)(A), (B) and (C). The Permittee shall develop its initial ~~plans~~ Plans prior to the initial startup of an emission unit(s). [40 CFR 63.6(e)(3)(i)]

i. During periods of startup, shutdown, and malfunction of an emission unit, the Permittee shall operate and maintain such unit, including associated air pollution control and monitoring equipment, in accordance with the procedures specified in the applicable Plan required above. [40 CFR 63.6(e)(3)(ii)]

ii. When actions taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the applicable Plan, the Permittee shall keep records for that event which demonstrate that the procedures specified in the Plan were followed. In addition, the Permittee shall keep records of these events as specified in 40 CFR 63.10(b), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the Permittee shall confirm in the periodic compliance report that actions taken during periods of startup, shutdown, and malfunction were consistent with the applicable Plan, as required by 40 CFR 63.10(d)(5). [40 CFR 63.6(e)(3)(iii)]

iii. If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) of an emission unit is not consistent with the procedures specified in the applicable Plan, and the emission unit exceeds a relevant emission standard, then the Permittee must record the actions taken for that event and must promptly report such actions as specified by 40 CFR 63.6(d)(5), unless otherwise specified elsewhere in this permit or in the CAAPP Permit to be issued for the plant. [40 CFR 63.6(e)(3)(iv)]

iv. The Permittee shall make changes to the Plan for an emission unit if required by the Illinois EPA or USEPA, as provided for by 40

CFR 63.6(e)(3)(vii), or as otherwise required by 40 CFR 63.6(e)(viii). [40 CFR 63.6(e)(3)(vii) and (viii)]

v. These Plans are records required by this permit, which the Permittee must retain in accordance with the general requirements for retention and availability of records (~~General Permit~~ See Condition 4.4). In addition, when the Permittee revises a Plan, the Permittee must also retain and make available the previous (i.e., superseded) version of the Plan for a period of at least 5 years after such revision. [40 CFR 63.6(e)(v) and 40 CFR 63.10(b)(1)]

Note: See also Condition 2.1.6 for the coal boilers.

CONDITION 1.5: ANCILLARY EQUIPMENT, INCLUDING THE TWO DIESEL ENGINES

a. Ancillary equipment, including the two diesel engines, shall be operated in accordance with good air pollution control practices to minimize emissions.

b. i. ~~Diesel~~ The diesel engines shall be used as emergency engines, as defined at 35 IAC 211.1920~~to meet the internal electricity or power needs of the plant~~.

ii. The power output of each diesel engine shall be no more than 1500 horsepower, ~~if it is an~~ as necessary to qualify as an emergency or standby unit as defined by 35 IAC 211.1920~~, or otherwise no more than 500 horsepower~~.

iii. Operation of each diesel engine shall not exceed 340 hours per year; provided, however, that the Illinois EPA may authorize temporary operation of each diesel engine~~s~~ in excess of 340 hours per year to address extraordinary circumstances that require operation of the engines, by issuance of a separate State construction permit addressing such circumstances.

iv. The f~~F~~uel fired in the diesel engines ~~shall contain no more than 0.05 percent by weight sulfur, so as to qualify as *very low sulfur fuel* as addressed by the federal Acid Rain program.~~

~~B. When ultra-low sulfur (ULS) diesel fuel becomes available in the area in which the plant is located, subsequent shipments of fuel for the engines~~ shall be ultra-low sulfur (ULS) diesel fuel or other alternative ultra-low sulfur fuel oil containing no more than 15 ppm sulfur (e.g., bio-diesel). ~~For this purpose, ULS diesel fuel shall be considered available in the area if it is available from three separate companies that supply oil in eastern Randolph County and western Washington County as of January 1 of a particular year. In such case, as of April 1 of that year, only shipments of ULS diesel fuel or other ultra low sulfur alternative fuels shall be accepted for the engines unless ULS diesel fuel ceases to be available in the area or unusual events disrupt the supply of ULS diesel fuel or alternative ULS fuel oil to the area.~~

Note: These requirements for the fuel fired in the engines constitute the determination of Best Available Control Technology (BACT) for the engines, as required under the PSD rules.

CONDITION 1.6: AUTHORIZATION TO OPERATE EMISSION UNITS

a. i. Under this permit, each coal boiler and associated equipment may be operated for a period that ends 180 days after the boiler first sends electricity to the grid to allow for equipment shakedown and required emissions testing. This period may be extended by Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing. This condition supersedes Standard Condition 6. (See Attachment 2)

ii. Upon successful completion of emission testing of a pulverized coal boiler demonstrating compliance with applicable limitations, the Permittee may continue to operate the boiler and associated equipment as allowed by Section 39.5(5) of the Environmental Protection Act.

b. i. The remainder of the plant, excluding the coal boilers, may be operated under this construction permit for a period of 365 days after initial startup of a pulverized coal boiler. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties experienced during shakedown of the plant. This condition supersedes Standard Condition 6. (See Attachment 2)

ii. Upon successful completion of emission testing of a pulverized coal boiler demonstrating compliance with applicable limitations, the Permittee may continue to operate the remainder of the plant as allowed by Section 39.5(5) of the Environmental Protection Act.

c. For the coal boilers and other emission units that are subject to federal New Source Performance Standards (NSPS), the Permittee shall fulfill applicable notification requirements of the NSPS, 40 CFR 60.7(a), including:

i. Written notification of commencement of construction no later than 30 days after such date (40 CFR 60.7(a)(1)); and

ii. Written notification of the actual date of initial startup within 15 days after such date (40 CFR 60.7(a)(3)).

CONDITION 1.7: POST-CONSTRUCTION MONITORING

a. The Permittee shall construct, operate and maintain an ambient air monitoring station, as follows, at an appropriate location in southwestern Illinois at a site outside the St. Louis metropolitan area to assist the Illinois EPA in evaluating PM2.5 air quality in the region and to support ~~evaluating~~ evaluation of the impact of sources

in southwestern Illinois on air quality and visibility in the Mingo Wilderness Area.

i. Monitoring shall be conducted in accordance with written monitoring procedures, in a manner that is consistent with applicable USEPA regulations for ambient air quality monitoring and collection of meteorological data.

ii. Ambient monitoring shall be conducted for speciated PM2.5 and ammonia. Meteorological data, i.e., temperature, wind direction and speed, humidity, and solar radiation, shall also be collected at the monitoring station.

iii. The Illinois EPA shall be consulted on the development of this monitoring station. The site for the station and the monitoring and meteorological instruments shall be subject to review and approval by the Illinois EPA prior to entering into site or purchase agreements. The procedures for monitoring shall be subject to review and comment by the Illinois EPA prior to initiation of ambient monitoring.

iv. The Permittee shall provide the Illinois EPA with reasonable access to the monitoring station, including allowing the Illinois EPA to conduct quality assurance audits of instruments. All logs and other operating records kept in conjunction with monitoring shall be considered records required by this permit, except that these records may be kept at the monitoring station until such time as the station is closed, when these records shall be transferred to the ~~source~~plant.

v. All air quality and meteorological data collected at the station, along with quality assurance data, shall be supplied to the Illinois EPA, which may make all such data publicly available under the Freedom of Information Act.

vi. Monitoring shall begin at least one year before the scheduled startup of the coal boilers, to assure that the monitoring station is fully operational when the plant begins operation and to obtain base air quality data.

vii. Monitoring shall continue for at least three full calendar years following the completion of the shakedown of the coal boilers.

b. As an alternative to conducting monitoring as set forth above, the Permittee may assist the Illinois EPA in conducting comparable monitoring in the southwestern Illinois region, by supplying equipment, developing monitoring sites or providing other support for the Illinois EPA's monitoring program, while the Illinois EPA or other parties assume responsibility for the day-to-day operation of the monitoring stations. For this purpose, monitoring may be conducted at a station in southwestern Illinois located in the St. Louis metropolitan area, as well as at stations located outside the metropolitan area. If the Permittee elects this alternative, the level of support provided by the Permittee shall be comparable to the

total expense ~~it~~ that the Permittee would ~~itself~~ have experienced ~~if it~~ had it conducted the above ambient monitoring ~~itself~~.

c. These requirements for ambient monitoring may be relaxed in the CAAPP Permit issued for the plant if the Illinois EPA determines that sufficient air quality data has been collected to satisfy the purposes for this monitoring.

CONDITION 1.8: RISK MANAGEMENT PLAN

Should this source be subject to the Chemical Accident Prevention Provisions in 40 CFR Part 68, then the Permittee shall submit:

a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or

b. A certification statement that the source is in compliance with all applicable requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan.

Note: This condition is imposed in this permit pursuant to 40 CFR 68.215(a).

~~CONDITION 1.9: CAPACITY OF PLANT~~

~~This permit allows the construction of a power plant that has less capacity than that addressed by the application without obtaining prior approval by the Illinois EPA, as follows. This condition does not affect the Permittee's obligation to comply with the applicable requirements for the various emission units at the plant:~~

~~a. The reduction in the capacity of the plant shall generally act to reduce air quality impacts, as emissions from individual emission units are reduced, heights of structures are reduced and heights of stacks are not significantly affected.~~

~~b. The reduction in the capacity of the plant shall result in a pro-rata reduction in the emission limitations established by this permit for the coal boilers that are based on the capacity of the boilers.~~

~~c. The Permittee shall notify the Illinois EPA prior to proceeding with any significant reduction in the capacity of the plant. In this notification, the Permittee shall describe the proposed change and explain why the proposed change will act to reduce impacts, with detailed supporting documentation.~~

~~d. Upon written request by the Illinois EPA, the Permittee shall promptly have dispersion modeling performed to demonstrate that the overall effect of the reduced capacity of the plant is to reduce air quality impacts, so that impacts from the plant remain at or below those predicted by the air quality analysis submitted as part of the application.~~

CONDITION 1.~~10~~9 SUPPLEMENTAL REQUIREMENTS FOR SO_2 ALLOWANCES

The Permittee shall retire additional SO_2 allowances under the federal Acid Rain Program (See Condition 2.1.5(a), Condition 3.1, and Attachment 3~~.1~~) above those otherwise required by this program in an amount equal to 25 percent of the actual SO_2 emissions from affected units (the coal-fired boilers) until such time as either: (1) An additional federal "cap and trade" control program is adopted and in effect covering SO_2 emissions from coal-fired power plants (such as the ~~proposed~~ Clean Air Interstate Rule ~~or Clear Skies Program~~), or (2) Other federal or state program is adopted and in effect further controlling SO_2 emissions from power plants on a regional basis, whichever occurs first.

Note: For example, in 2008 when the annual SO_2 emissions from the coal-fired boilers are limited to 10,679 tons, this condition could result in the retirement of up to 2,670 additional SO_2 allowances (0.25 x 10,679 tons/year = 2,669.8). The actual amount of additional allowances retired would be determined from the actual annual SO_2 emissions of the boilers. This condition reflects a commitment made by the Permittee to the United States Fish and Wildlife Service (USFWS) in response to concerns expressed by the USWFS about the impact of the plant on Air Quality Related Values in the Wilderness Area in the Mingo Wildlife ~~r~~Refuge in southeastern Missouri. (See also Conditions 2.1.7(a)(ii) and (b)(ii) ~~and 2.1.16(a)(ii)~~.)

SECTION 2: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR EMISSION UNITS

CONDITION 2.1: UNIT-SPECIFIC CONDITIONS FOR THE BOILERS

2.1.1 Emission Unit Description

The affected units for the purpose of these specific permit conditions are two pulverized coal boilers with individual air pollution control trains. The boilers would also have the capability to burn natural gas, which would be used for startup of the boilers.

2.1.2 Control Technology Determination

a. Each boiler shall be operated and maintained with the following features to control emissions:

i. Good combustion practices.

ii. Low-NO_x burners.

iii. Selective catalytic reduction (SCR).

iv. Electrostatic precipitator (ESP).

v. Wet flue gas desulfurization (WFGD).

vi. Wet electrostatic precipitator (WESP).

b. The emissions from each boiler shall not exceed the following limits ~~except during startup, shutdown and malfunction as addressed by Condition 2.1.2(e).~~:

i. A. PM - 0.015 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing for PM (filterable) in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(e).

B. PM_{10} - 0.035 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing for PM (filterable and condensable) in accordance with Condition 2.1.8 and from equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(e). A lower limit (as low as 0.018 lb/million Btu) may be set pursuant to Condition 2.1.17, which requires reevaluation of the above limit based actual PM_{10} emissions of the affected boilers.

ii. A. SO_2 - 0.182 lb/million Btu.

This limit shall apply ~~on~~ as a 30 day rolling average, with compliance determined using the compliance procedures set forth in the NSPS, 40 CFR 60.48a. In lieu of the compliance procedures of the NSPS, for a 30 day period that includes a startup of an affected boiler, compliance may be determined on a mass-basis by calculating the average emission rate in lb/million Btu from the total emissions of SO_2 and the total heat input to the boiler during the period, as determined under the methodology of the Acid Rain program.

B. SO_2 – 98 percent control (2 percent of the potential combustion concentration of the coal supply for the boilers).

This limit shall take effect 18 months after the initial startup of the boiler. This limit shall apply as a 12 month rolling average with compliance determined based on the actual SO_2 emissions of the boiler determined using the procedures set forth under the Acid Rain program and its theoretical emissions of SO_2, that would result from combustion of coal without emissions control systems calculated as the product of the average SO_2 input rate from "as fired" fuel analyses, determined in accordance with 40 CFR 60, Appendix A, Method 19, and 60.48a(b), and the heat input to the boilers, also determined using procedures under the Acid Rain program.

Note: These limits for SO_2 emissions apply to all operations of a boiler, that is, emissions of SO_2 during periods of startup, shutdown and malfunction are not excluded from the determination of compliance.

iii. NO_x - 0.~~08~~ 07 lb/million Btu.

This limit shall apply as a 30 day rolling average using the compliance procedures set forth in the NSPS, 40 CFR 60.48a. In lieu of the compliance procedures of the NSPS, for a 30 day period that includes a startup or shutdown of an affected boiler compliance may be determined on a mass-basis by calculating the average emission rate in lb/million Btu from the total emissions of NOx and the total heat input to the boiler during the period, as determined under the methodology of the NO_x Trading program.

Note: This limit for NO_x emissions applies to all operations of a boiler, that is, emissions of NO_x during startup, shutdown and malfunction are not excluded from the determination of compliance.

iv. A. CO - 0.12 lb/million Btu.

This limit shall apply as a 24-hour block average basis, with continuous monitoring conducted in accordance with Condition 2.1.9. This limit shall not apply during periods of startup and shutdown as addressed below.

B. CO – 893 lb/hr* for startup and shutdown.

This limit shall apply as a 24-hour block average basis with continuous monitoring conducted in accordance with Condition 2.1.9. This limit shall apply during periods of startup and shutdown as also addressed by Condition 2.1.2(e). (For a startup event, the 24-hour period shall begin with the startup of the boiler, i.e., initial firing of fuel. For a shutdown event, the 24-hour period shall end with the shutdown of the boiler, i.e., cessation of fuel flow to the boiler.)

* This value is the product of the rated capacity of the boiler in million Btu/hour and the generally applicable BACT limit for CO, 0.12 lb/million Btu.

v. VOM - 0.004 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(e).

vi. Sulfuric Acid Mist – 0.005 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(e).

vii. Fluorides – 0.00026 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.1.8 and equipment operation. This limit shall not apply during startup, shutdown and malfunction as addressed by Condition 2.1.2(e).

c. i. The boilers shall each comply with the requirements for control of mercury emissions from coal-fired utility boilers as established by USEPA pursuant to ~~Section 112(d)~~

~~of~~ the Clean Air Act~~, once applicable regulations are adopted by USEPA~~.

ii. A. If ~~such~~ standards for control of mercury emissions from coal-fired utility boilers pursuant to the Clean Air Act have ~~are~~ not yet been adopted by USEPA or are not ~~yet~~ effective, such that the boilers must be subject to a case-by-case determination of MACT pursuant to Section 112(g) of the Clean Air Act, a boiler shall comply with ~~any~~ one of the following requirements with respect to emissions of mercury:

~~I. An emission rate of 0.000020 pound/Megawatt-Hr (lb/MWh) or emissions below the detection level of established test methodology (Permit Option A);~~

I~~I~~. A removal efficiency of 95 percent achieved without~~,~~ injection of activated carbon or other similar material specifically used to control emissions of mercury, comparing the emissions and the mercury contained in the ~~fuel~~ coal supply (Permit Option ~~B~~A); or

II~~I~~. ~~Injection~~ Control by injection of powdered activated carbon or other ~~similar~~ material or a combination of materials specifically ~~used to~~ for control of mercury emissions ~~of mercury in a manner that is designed~~ to achieve the maximum practicable degree of mercury removal, as established in accordance with Attachment 2 (Permit Option ~~C~~B).

B. I. Compliance with Permit Option~~s~~ A ~~or B~~ shall be demonstrated by periodic testing and proper operation of a boiler consistent with other applicable requirements that relate to control of mercury (e.g., requirements applicable to PM and SO_2 emissions) as may be further developed, or revised in the CAAPP Permit issued ~~to~~ for the plant. Compliance with Permit Option ~~C~~ B shall be demonstrated by proper operation of a boiler and such other ~~procedures~~ practices ~~specified~~ developed pursuant to Attachment 4 and ~~by~~ the applicable State construction permit for the mercury control ~~injection~~ system. Notwithstanding the above, periods of startup, shutdown and malfunction shall be addressed by the Startup, Shutdown and Malfunction Plan as provided by 40 CFR Part 63, Subpart A. (Refer to Condition 1.4.)~~, including continuous monitoring or a continuous measurement method such as proposed USEPA, method 324 (40 CFR Part 63, Appendix B, Method 24)~~.

~~C~~II. These ~~permit~~ Permit Options shall take effect 12 months after initial startup of an affected boiler, provided however, the Permittee may, upon written notice to the Illinois EPA, extend this period for up to an additional 12 months if needed for detailed evaluation of mercury emissions from the boilers or physical changes to the boilers related to control of mercury emissions. As part of this notice, the Permittee shall explain why the necessary evaluation of emissions or physical changes to the boilers could not reasonably be completed earlier, identify the activities that it intends to perform to evaluate emissions or further enhance control for emissions, and specify the particular practices it will use during this period as good air pollution control practices to minimize emissions of mercury. Prior to ~~the~~ this~~date that these are in effect~~, the Permittee shall use good air pollution control practices to minimize emissions of mercury.

Note: In conjunction with either Compliance Option, the Permittee shall also conduct continuous emissions monitoring on a continuous or semi-continuous basis for the emissions of mercury from each boiler. (Refer to Condition 2.1.9-2.)

d. i. The boilers shall each comply with the requirements for control of hydrogen chloride emissions established by USEPA pursuant to ~~Section 112(d) of~~ the Clean Air Act, once applicable regulations are adopted by USEPA.

ii. A. If such standards are not adopted by USEPA ~~or~~, or are not ~~yet~~ effective, such that the boilers must be subject to a case-by-case determination of MACT pursuant to Section 112(g) of the Clean Air Act, a boiler shall comply with one of the following requirements with respect to emissions of hydrogen chloride:

I. An emission rate of 0.0032 lb/million Btu, 3-hour average (Permit Option A); or

II. A removal efficiency of 98 percent, 3-hour average, comparing the emissions and the chlorine content of the fuel supply, expressed as equivalent hydrogen chloride (Permit Option B).

B. Compliance with Permit Options shall be demonstrated by periodic testing and proper operation of a boiler

consistent with other applicable requirements that relate to control of SO_2 emissions, as may be further developed or revised in the CAAPP Permit issued ~~to~~ for the plant. Notwithstanding the above, periods of startup, shutdown and malfunction shall be addressed by the Startup, Shutdown and Malfunction Plan as provided by 40 CFR Part 63, Subpart A. (Refer to Condition 1.4.)

C. These Permit Options shall take effect 12 months after ~~Initial~~ initial startup of a boiler. Prior to such date, the Permittee shall use good air pollution control practices to minimize emissions of hydrogen chloride.

e. The Permittee shall use good air pollution control practices to minimize emissions during startup, shutdown and malfunction of a boiler as further addressed in Condition 2.1.6, including the following:

i. Use of natural gas during startup to heat the boiler prior to initiating firing of ~~solid fuel~~coal;

ii. Operation of the boiler and associated air pollution control equipment in accordance with written operating procedures that include startup, shutdown and malfunction plan(s) (See also Condition 1.4); and

iii. Inspection, maintenance and repair of the boiler and associated air pollution control equipment in accordance with written maintenance procedures.

Note: These requirements are applicable for emissions of SO_2, NO_x and CO, for which continuous emissions monitoring is performed and the numerical limits in Condition 2.1.2(b) address emissions during startup, shutdown and malfunction, as well as for emissions of PM, VOM and other pollutants, for which continuous emissions monitoring is not performed and the numerical limits in Condition 2.1.2(b) and (c) do not apply during startup, shutdown and malfunction. For PM, VOM, sulfuric acid mist and fluorides for which the numerical limits in Condition 2.1.2(b) and (c) do not apply during startup, shutdown and malfunction the lb/hour limits, 3-hour average, in Condition 2.1.7(a) [Attachment 1: Table 1], which continue to apply during such periods, shall serve as "secondary limits" for purposes of BACT, with compliance determined based on engineering calculations and analysis.

2.1.3 Applicable Federal Emission Standards

a. i. The boilers are subject to a New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units, 40 CFR 60, Subparts A and Da. The Illinois EPA

administers NSPS in Illinois on behalf of the USEPA under a delegation agreement.

ii. The emissions from each boiler shall not exceed the applicable limits pursuant to the NSPS. In particular, the NO_x emissions from each boiler shall not exceed 1.6 lb/MW-hr gross energy output, based on a 30-day rolling average, pursuant to 40 CFR 60.44a(d).

iii. The particulate matter emissions from each boiler shall not exceed 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity pursuant to 40 CFR 60.42a(b).

b. At all times, the Permittee shall maintain and operate each boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.1.4 Applicable State Emission Standards

Each boiler is subject to the following state emission standards.

a. Opacity – 35 IAC 212.122 (20 percent opacity)

b. Particulate matter – 35 IAC 212.201 (0.1 lb/million Btu)*

c. Sulfur dioxide – 35 IAC 214.121 (1.2 lb/million Btu)*

d. Carbon monoxide – 35 IAC 216.121 (200 ppm, @ 50 % excess air)*

e. Nitrogen oxides – 35 IAC 217.121 (0.7 lb/million Btu)*

* This standard is not as stringent as the requirement in Condition 2.1.2.

2.1.5. Applicability of Other Regulations

a. Each boiler is an affected unit under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act and is subject to certain control requirements and emissions monitoring, requirements pursuant to 40 CFR Parts 72, 73 and 75. (See also Condition 3.1 and Attachment 3)

b. The boilers ~~would~~ will qualify as Electrical Generating Units (EGU) for purposes of 35 IAC Part 217, Subpart W, the NO_x Trading Program for Electrical Generating Units. As EGU, the Permittee ~~would~~ will have to hold NO_x allowances for the NO_x emissions of the boilers during each seasonal control period. (See also Condition 3.2)

c. For particulate matter, the boilers are pollutant-specific emissions units that will be subject to 40 CFR Part 64, Compliance Assurance Monitoring for Major Stationary Sources. As

such, the application for Clean Air Act Permit Program (CAAPP) Permit for the source must include a Compliance Assurance Monitoring (CAM) plan for the boilers.

2.1.6 Operating Requirements

a. The Permittee shall operate each boiler and associated air pollution control equipment in accordance with good air pollution control practices to minimize emissions, by operating in accordance with detailed written operating procedures as it is safe to do so. These procedures at a minimum shall:

i. Address startup, normal operation, shutdown and malfunction events.

ii. Fulfill applicable requirements of Condition 1.4 for a Startup, Shutdown and Malfunction Plan, including detailed provisions for review of relevant operating parameters of the boiler systems during startup, shutdown and malfunction as necessary to make adjustments and corrections to reduce or eliminate any excess emissions.

iii. With respect to startup, address readily foreseeable startup scenarios, including so called "hot startups" when the operation of a boiler is only temporarily interrupted, and provide for appropriate review of the operational condition of a boiler prior to initiating startup of the boiler.

iv. A. With respect to malfunction, identify and address likely malfunction events with specific programs of corrective actions, and provide that upon occurrence of a malfunction that will result in emissions in excess of the applicable limits in Condition 2.1.2(b), 2.1.3 and 2.1.4, the Permittee shall, as soon as practicable, repair the affected equipment, reduce the operating rate of the boiler or remove the boiler from service so that excess emissions cease.

B. Consistent with the above, if the Permittee has maintained and operated a boiler and associated air pollution control equipment so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of the boiler within 90 minutes, unless the malfunction is expected to be repaired within 120 minutes or such shutdown could threaten the stability of the regional electrical power supply. In such case, shutdown of the system shall be undertaken when it is apparent that repair will not be accomplished within 120 minutes or shutdown will not endanger the regional power system. In no case shall shutdown of the

boiler be delayed solely for the economic benefit of the Permittee.

Note: If the Permittee determines that the continuous emission monitoring system (CEMS) is inaccurately reporting excess emissions, the boiler may continue to operate provided the Permittee records the information it is relying upon to conclude that the boiler and associated emission control systems are functioning properly and the CEMS is reporting inaccurate data and the Permittee takes prompt action to resolve the accuracy of the CEMS.

b. The Permittee shall maintain each boiler and associated air pollution control equipment in accordance with good air pollution control practices to assure proper functioning of equipment and minimize malfunctions, including maintaining the boiler in accordance with written procedures developed for this purpose.

c. The Permittee shall handle the fuel for the boilers in accordance with a written Fuel Management Plan that shall be designed to provide the boilers with a consistent fuel supply that meets relevant criteria needed for proper operation of the boilers and their control systems.

d. The Permittee shall review its operating and maintenance procedures and its ~~fuel~~ Fuel ~~management~~ Management ~~plan~~ Plan for the boilers as required above on a regular basis and revise them if needed consistent with good air pollution control practices based on actual operating experience and equipment performance. This review shall occur at least annually if not otherwise initiated by occurrence of a startup, shakedown, or malfunction event that is not adequately addressed by the existing plans or a specific request by the Illinois EPA for such review.

2.1.7 Emission Limitations

a. i. Emissions from the boilers shall not exceed the limits in Attachment 1, Table I. The limits in Table I are based upon the emission rates and the maximum firing rate specified in the permit application consistent with the air quality analysis submitted by the Permittee pursuant to PSD.

ii. Effective 12 months after completion of the initial performance tests or 24 months after initial startup of the boiler, whichever occurs first, SO_2 emissions from the boiler shall not exceed 2,450 lb/hour, daily average.

iii. A. For hourly limitations for which compliance is to be determined on a 24-hour average basis, continuous emission monitoring is required for the pollutant (see Condition 2.1.9). Monitoring data shall be compiled on a calendar day basis to determine

compliance, except that for NO_x and CO for a calendar days in which a startup or shutdown of a boiler occurred or a malfunction addressed by Condition 2.1.6(a)(iv)(B) occurred, monitoring data shall be compiled for the 24-hour period following or preceding such event, as appropriate.

~~iii~~B. For hourly limitations for which compliance is to be determined on a 3-hour average basis, emission testing is required for the pollutant (see Condition 2.1.8). The results of such testing shall be compiled as the average of individual test runs to determine compliance, as provided by 35 IAC Part 283.

b. i. The SO_2 emissions from the boilers shall comply with a lower hourly limit, pursuant to an evaluation conducted in accordance with Condition 2.1.16.

ii. The SO_2 emissions from the coal-fired boilers, in total, in the initial years of operation of the plant through calendar year 2009 shall not exceed 10,679 tons and in calendar year 2010 shall not exceed 11,273 tons.

Note: The above limits on daily and annual SO_2 emissions in Conditions 2.1.7(a)(ii) and (b)(ii) reflect commitments made by the Permittee to the USFWS in response to concerns expressed by the USWFS about the impact of the plant on Air Quality Related Values in the Wilderness Area in the Mingo Wildlife Refuge in southeastern Missouri.

2.1.8 Emission Testing

a. i. A. Within 60 days after achieving the maximum production rate at which a boiler will be operated but not later than 180 days after initial startup of each boiler, the Permittee shall have tests conducted for opacity and emissions of NO_x, CO, PM, VOM, SO_2, hydrogen chloride, hydrogen fluoride, sulfuric acid mist, and mercury and other metals, as follows, at its expense by an approved testing service while the boiler is operating at maximum operating load and other representative operating conditions~~, including firing of coal only and coal with supplemental fuel~~. (In addition, the Permittee may also perform measurements to evaluate emissions at other load and operating conditions.)

B. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of the boiler, provided that initial performance testing required by the NSPS, 40 CFR Part

60, Subpart Da, has been completed for the boiler and the test report submitted to the Illinois EPA.

ii. Between 9 and 15 months after performance of the initial testing that demonstrates compliance with applicable requirements, the Permittee shall have the emissions of PM, VOM, hydrogen chloride, hydrogen fluoride, sulfuric acid mist, and mercury and other metals from each affected boiler retested as specified above.

iii. The Permittee shall conduct additional tests for PM emissions as needed for purposes of the evaluation of condensable PM_{10} emissions required by Condition 2.1.17.

~~iii~~iv. A. Thereafter, the Permittee shall also test PM emissions from each boiler as provided below at a regular interval that is no greater than ~~36~~ 30 months, except as follows. If the results of two of these PM tests consecutively for a boiler demonstrate PM emissions ~~of 0.010 lb/million Btu or less~~that are two thirds or less than the applicable limits (e.g., 0.010 lb/mmBtu or less for PM, as compared to the limit of 0.015 lb/mmBtu), the maximum interval for PM testing of such boiler ~~may be doubled, i.e., PM testing~~will be at least once every ~~54~~ 48 months. However, if a PM test for such a boiler then shows PM emissions ~~above 0.010 lb/million Btu~~that are more than two thirds of an applicable limit, the maximum interval between testing shall revert to ~~36~~ 30 months until two consecutive~~ly~~ tests again show PM emissions ~~of 0.010 lb/million Btu or less~~that are two thirds or less than the applicable limits. For the purpose of these provisions, the two consecutive tests must be at least 24 months apart.

Note: The CAAPP Permit may establish requirements for more frequent emission testing.

B. Whenever PM testing for a boiler is performed as required above, testing for emissions of mercury and hydrogen chloride shall also be performed as provided below.

iv. In addition to the emission testing required above, the Permittee shall perform emission tests as provided below as requested by the Illinois EPA for a boiler within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA. Among other reasons, such testing may be required if there is a significant increase in the mercury or chlorine content of the fuel supply to the boilers.

Note: Specific requirements for periodic emission testing may be established in the CAAPP Permit for the plant.

v. Within two years of the initial startup of each affected boiler, the Permittee shall have emission testing conducted for dioxin/furan emissions as provided below.

b. The following methods and procedures shall be used for testing, unless~~,~~ ~~otherwise~~ other methods adopted by or being developed by USEPA are specified or approved by the Illinois EPA.

Opacity	Method 9
Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
Particulate Matter[1]	Method 5, or Methods 5 and Method 201~~,~~ or 201A (40 CFR 51, Appendix M), with Method 19 as specified in 40 CFR 60.48a(b)
Condensable Particulate[2]	Method 202[2]
Nitrogen Oxides[3]	Method 19, as specified in 40 CFR 60.48a(d)
Sulfur Dioxides[3]	Method 19, as specified in 40 CFR 60.48a(c)
Carbon Monoxide[3]	Method 10
Volatile Organic Material[4]	Methods 18 and 25A
Hydrogen Chloride	Method 26
Hydrogen Fluoride	Method 26
Sulfuric Acid Mist	Method 8[2]
Metals[5, 6]	Method 29
Dioxin/Furan	Method 23

Notes:

[1] The Permittee may report all PM emissions measured by USEPA Method 5 as PM_{10}, in which case separate testing using USEPA Method 201 or 201A need not be performed.

[2] ~~Testing of condensable particulate emissions is required even though an emission limit is not set for condensable particulate emissions, for purposes of developing emission data.~~Notwithstanding the general requirement to use USEPA test methods, appropriate refinements or adaptations shall be made to the USEPA test methods or other established test methods may be used for testing, subject to review and approval by the Illinois EPA to facilitate accurate and reliable measurements given the composition of the exhaust. In particular, adaptations shall be made to USEPA Method 202, to prevent positive bias from conversion of sulfur dioxide to sulfuric acid in the impingers, for example, by additional purges or separate, simultaneous measurements of the sulfuric acid emissions.

[3] Emission testing shall be conducted for purposes of certification of the continuous emission monitors required by Condition 2.1.9. Thereafter, the NO_x, SO_2 and CO emission data from certified monitors may be provided in lieu of conducting emissions tests.

[4] The Permittee may exclude methane, ethane and other exempt compounds from the results of any VOM test provided that the test protocol to quantify and correct for any such compounds is included in the test plan approved by the Illinois EPA.

[5] For purposes of this permit, metals are defined as mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.

[6] During the initial emissions testing for metals, the Permittee shall also conduct measurements using established test methods for the principle forms of mercury present in the emissions, i.e., particle bound mercury, oxidized mercury and elemental mercury.

c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 4.2.

ii. In addition to other information required in a test report, test reports shall include detailed information on the operating conditions of a boiler during testing, including:

A. Fuel consumption (in tons);

B. Composition of fuel (Refer to Condition 2.1.10(b)), including the metals, chlorine and fluorine content, expressed in pound per million Btu;

C. Firing rate (million Btu/hr) and other significant operating parameters of the boiler, including temperature of the flue gas entering the SCR;

D. Control device operating rates or parameter, e.g., SCR reagent injection rate, ESP voltages and current flows, WFGD pressure drop and reagent addition rate, WESP voltages current flows, and water flow rate;

E. Opacity of the exhaust from the boiler, 6-minute averages and 1-hour averages;

F. Turbine/Generator output rate (MWe gross).

2.1.9-1 Emissions Monitoring - SO_2, NO_x, CO and Opacity

a. i. The Permittee shall install, certify, operate, calibrate, and maintain continuous monitoring systems on each boiler

for opacity, emissions of SO_2, NO_x and CO, and either oxygen or carbon dioxide in the exhaust. The opacity monitor shall be located before the wet control equipment as needed to prevent interference from moisture in the ductwork.

ii. The Permittee shall also operate and maintain these emissions monitoring systems according to site-specific monitoring plan(s), which shall be submitted at least 60 days before the initial startup of a boiler to the Illinois EPA for ~~its~~ review and comment. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location(s), which shall be approved by the Illinois EPA prior to installation of equipment.

iii. The Permittee shall fulfill the applicable requirements for monitoring in the NSPS, 40 CFR 60.13, 60.47a, and 40 CFR 60 Appendix B, the federal Acid Rain Program, 40 CFR Part 75; 35 IAC Part 217, Subpart W, the NO_x Trading Program for Electrical Generating Units; and NESHAP 40 CFR 63.8 and 63.10. These rules require that the Permittee maintain detailed records for both the measurements made by these systems and the maintenance, calibration and operational activity associated with the monitoring systems.

b. In addition, when NO_x or SO_2 emission data are not obtained from a continuous monitoring system because of system breakdowns, repairs, calibration checks and zero span adjustments, emission data shall be obtained by using standby monitoring systems, emission testing using appropriate USEPA Reference Methods ~~(Method 7 or 7A for NO_x and Method 6 for SO_2)~~, or other approved methods as necessary to provide emission data for a minimum of 75 percent of the operating hours in a boiler operating day, in at least 22 out of 30 successive boiler operating days, pursuant to 40 CFR 60.47a(f) and (h).

Note: Fulfillment of the above criteria for availability of emission data from a monitoring system does not shield the Permittee from potential enforcement for failure to properly maintain and operate the system.

c. Compliance with the most stringent emission monitoring requirements for a pollutant is sufficient to demonstrate compliance with all emission monitoring requirements for that pollutant.

2.1.9-2 Emissions Monitoring - Mercury

a. If the boilers are subject to Condition 2.1.2(c)(ii), the Permittee shall install, operate and maintain a continuous or semi-continuous monitoring system to measure the mercury emissions of each boiler using monitoring methodology and procedures developed, proposed or adopted by USEPA for monitoring of mercury emissions from coal-fired utility boilers, such as the

monitoring and measurement method proposed by USEPA as USEPA Method 324 (40 CFR Part 63, Appendix B, Method 324).

Note: If the boilers are subject to Condition 2.1.2(c)(i), the Permittee will be subject to the monitoring requirements for mercury emissions set by the applicable USEPA regulations.

b. The Permittee shall keep logs for the operation, calibration and maintenance of these monitoring systems.

2.1.10 Operational Monitoring and Measurements

a. The Permittee shall install, evaluate, operate, and maintain meters to measure and record consumption of natural gas by each boiler.

b. i. The Permittee shall sample and analyze the sulfur and heat content of the coal supplied to the boilers in accordance with USEPA Reference Method 19 (40 CFR 60, Appendix A, Method 19).

ii. The Permittee shall analyze samples of all coal supplies ~~and any alternate fuel supplies~~ that are components ~~in~~ of the ~~solid fuel~~ coal supply to the boilers and the ~~solid fuel~~ coal supply, itself, for mercury and other metals and chlorine content, as follows:

A. Analysis shall be conducted in accordance with USEPA Reference Methods or other method approved by USEPA.

B. Analysis of the fuel supply to the boiler, itself, shall be conducted in conjunction with performance testing of a boiler.

C. Analysis of representative samples of ~~solid fuels~~ coal shall be conducted in conjunction with acceptance of coal from ~~a new mine or any alternate fuel~~off-site.

D. Analysis of representative samples of ~~solid fuels~~ coal shall be conducted at least every two years, if a more frequent analysis is not needed pursuant to the above requirements.

~~E. The CAAPP permit issued to the plant may relax these requirements.~~

c. i. The Permittee shall install, operate and maintain systems to measure key operating parameters of the control system for each boiler, including:

A. Reagent injection rate for the SCR unit;

B. Voltages, currents and sparking rates for the ESP;

C. Reagent usage rate for the WFGD; and

D. Voltages, currents, sparking rates and water flow for the WESP.

ii. The Permittee shall maintain the records of the measurements made by these systems and records of maintenance and operational activity associated with the systems.

d. i. The Permittee shall install and operate a particulate matter continuous monitoring system~~s~~ on each boiler for the purpose of compliance assurance monitoring. The PM continuous monitoring system shall monitor PM concentration downstream of the WESP; provided, however, with approval of the Illinois EPA it may be shifted to upstream of the WFGD if it is demonstrated within six months of operation that the device cannot be reliably operated following a wet control device.

ii. The Permittee shall operate, calibrate and maintain each such system in accordance with the applicable USEPA performance specification and other applicable requirements of the NSPS for monitoring systems and in a manner that is generally consistent with published USEPA guidance for use of such systems for compliance assurance monitoring.

iii. The Permittee shall also operate and maintain these monitoring systems according to a site-specific monitoring plan, which shall be submitted at least 60 days before the initial startup of a boiler to the Illinois EPA for its review and comment. With this submission, the Permittee shall submit the proposed type of monitoring equipment and proposed sampling location, which shall be approved by the Illinois EPA prior to installation of equipment.

2.1.11 Recordkeeping

a. The Permittee shall maintain the following records with respect to operation and maintenance of each boiler and associated control equipment:

i. An operating log for the boiler that at a minimum shall address:

A. Each startup of the boiler, including the nature of the startup, sequence and timing of major steps in the startup, any unusual occurrences during the startup, and any deviations from the established startup procedures, with explanation;

B. Each shutdown of the boiler, including the nature and reason for the shutdown, sequence and timing of major

steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation; and

C. Each malfunction of the boiler system that significantly impairs emission performance, including the nature and duration of the event, sequence and timing of major steps in the malfunction, corrective actions taken, any deviations from the established procedures for such a malfunction, and preventative actions taken to address similar events.

ii. Inspection, maintenance and repair log(s) for the boiler system that, at a minimum, shall identify such activities that are performed related to components that may effect emissions; the reason for such activities, i.e., whether planned or initiated due to a specific event or condition; and any failure to carry out the established maintenance procedures, with explanation.

iii. Copies of the steam charts and daily records of steam and electricity generation.

b. The Permittee shall maintain records of the following items related to fuels used in the boilers:

i. Records of the sampling and analysis of ~~solid fuel~~ coal supply to the boilers conducted in accordance with Condition 2.1.10(b).

ii. A. The sulfur content of ~~solid fuel~~coal, lb sulfur/million Btu, supplied to the boilers, as determined pursuant to Condition 2.1.10(b)(i); and

B. The sulfur content of ~~solid fuel~~ coal supplied to the boilers on a 30-day rolling average, determined from the above data.

iii. The amount of fuel combusted in each boiler by type of fuel as specified in 40 CFR Part 60, Appendix A, Method 19.

c. For each boiler, the Permittee shall maintain records of the following items related to emissions:

i. Records of ~~SO_2~~ SO_2, NO_x and PM emissions and operation for each boiler~~-~~operating day, as specified by 40 CFR 60.49a.

ii. A. With respect to the SO_2 ~~reduction~~ reduction-based standard in 40 CFR 60.43a(a)(1), for each 30 day averaging period, the SO_2 emissions in lb/million Btu and the required SO_2 emission rate as determined by applying the permissible emission fraction to the potential SO_2 emission rate of the ~~solid fuel~~ coal supply.

B. With respect to the SO_2 reduction in Condition 2.1.2(b)(ii)(B), for each 12 month period once this requirement takes effect, the actual SO_2 emissions, the theoretical "uncontrolled" SO_2 emissions, and the level of SO_2 control achieved.

iii. Records of CO emissions of the boiler based on the continuous emissions monitoring system required by Condition 2.1.9.

iv. Records of emissions of VOM, mercury and other pollutants from the boiler, based on fuel usage and other operating data for the boiler and appropriate emission factors, with supporting documentation.

d. The Permittee shall record the following information for any period during which a boiler deviated from an applicable requirement:

i. Each period during which an affected unit exceeded the requirements of this permit, including applicable emission limits, which records shall include at least the information specified by Condition 4.3.

ii. Each period during which opacity of a boiler exceeded the level of opacity at which emission testing has demonstrated that the boiler would comply with particulate matter emission limits.

2.1.12 Notifications

a. The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements that are not addressed by the regular reporting required ~~below~~pursuant to Condition 2.1.13. These notifications shall include the information specified by Condition 4.5.

~~b. The Permittee shall notify the Illinois EPA in writing at least 30 days prior to initial firing of any solid fuel other than coal in a boiler.~~

2.1.13 Reporting

a. i. The Permittee shall fulfill applicable reporting requirements in the NSPS, 40 CFR 60.7(c) and 60.49a, for each boiler. For this purpose, quarterly reports shall be submitted to the Illinois EPA no later than 30 days after the end of each calendar quarter. (40 CFR 60.49a (i))

ii. In lieu of submittal of paper reports, the Permittee may submit electronic quarterly reports for SO_2 and/or NO_x and/or opacity. The electronic reports shall be submitted no later than 30 days after the end of the calendar quarter

and shall be accompanied by a certification statement indicating whether compliance with applicable emission standards and minimum data requirements of 40 CFR 60.49a were achieved during the reporting period. (40 CFR 60.49a(j))

b. i. Either as part of the periodic NSPS report or accompanying such report, the Permittee shall report to the Illinois EPA any and all opacity and emission measurements for a boiler that are in excess of the respective requirements set by this permit. These reports shall provide for each such incident, the pollutant emission rate, the date and duration of the incident, and whether it occurred during startup, malfunction, breakdown, or shutdown. If an incident occurred during malfunction or breakdown, the corrective actions and actions taken to prevent or minimize future reoccurrences shall also be reported. (40 CFR 60.7(c))

ii. These reports shall also address any deviations from applicable compliance procedures for a boiler established by this permit, including specifying periods during which the continuous monitoring systems were not in operation.

c. The Permittee shall comply with applicable reporting requirements under the Acid Rain Program, with a single copy of such report sent to Illinois EPA, Division of Air Pollution Control Compliance Section.

2.1.14 Operational Flexibility/Anticipated Operating Scenarios

a. The Permittee is authorized to use ~~fuel~~ coal from ~~a different mine~~ off-site in the boilers, subject to the restrictions in Condition 1.3, without ~~prior notification to the Illinois EPA or~~ revision of this permit.

b. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements or to properly obtain a State construction permit in a timely manner for any activity involving the boiler or the fuel handling equipment that constitutes construction or modification of an emission unit, as defined in 35 IAC 201.102, or that entails receiving of coal by rail or truck. (See also Condition 1.3)

2.1.15 Construction of Additional Control Measures

a. The Permittee is generally authorized under this permit to construct and operate additional devices and features to control emissions from a boiler, which are not described in the application for this permit, as follows. This condition does not affect the Permittee's obligation to comply with the applicable requirements for the boilers:

~~a~~b. This authorization only extends to devices or features such as sorbent injection systems that are designed to reduce emissions that are identified during the detailed design of the boilers and any refinements to that design that occur during construction and the initial operation of the boilers. These measures may also serve to improve boiler operation as they reduce consumption of materials, but do not include measures that would increase a boiler's rated heat input capacity.

~~b. This authorization only extends to additional devices or features that are identified during the detailed design of the boilers and any refinements to that design that occur during construction and the initial operation of the boilers.~~

c. Prior to beginning actual construction of any such device or feature, the Permittee shall apply for and obtain a separate State construction permit for it from the Illinois EPA pursuant to 35 IAC Part 201, Subpart D. ~~In the application for this permit, the Permittee shall describe the additional device or feature and explain how it will act to reduce emissions, with detailed supporting documentation. In acting upon this permit, the Illinois EPA may specify additional operating parameters that must be monitored or measured, such as sorbent injection rates, and additional provisions for required emissions testing.~~

~~d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the proposed device or feature does not significantly affect the air quality impacts from the boilers, so that impacts from the boilers are of the same magnitude of those predicted by the air quality analysis accompanying the application.~~

2.1.16 Optimization of Daily Control of SO_2 Emissions

a. i. The Permittee shall evaluate SO_2 emissions from the boilers to determine whether a lower hourly limit may be reliably achieved by the SO_2 control system on a daily basis without unacceptable consequences, i.e., inability to ~~while~~ comply~~ing~~ with other emission limits or requirements, or ~~and without~~ significant risk to equipment or personnel, and without unreasonable consequences, i.e., ~~. This evaluation shall also examine whether compliance with such a limit would be accompanied by~~ a significant increase in actual particulate matter emissions from the boilers or a substantial~~, as well as on unreasonable~~ increase in maintenance and repair needed for the boilers.

ii. A. If the Permittee fails to complete the evaluation or submit the required report in a timely manner as specified by Condition 2.1.16(b), the hourly SO_2 emission limit in Condition 2.1.7(a)(i) shall automatically become 1,350 lb/hour, daily average,

not to be exceeded more than one day per month, annual average.

Note: This limit is based on the nominal capacity of each boiler and the SO_2 emission rate set as BACT, i.e., 0.182 lb/million Btu.

~~iii~~B. This permit will be revised to set lower ~~hourly~~ limit(s) for SO_2 emissions (but no lower than the above default limit), if the Illinois EPA, ~~as a~~after considering the results of ~~this~~ any evaluation performed by the Permittee, ~~the Illinois EPA~~ finds that the boilers can and should be able to consistently comply with such limit(s) without unacceptable or unreasonable consequences. Additional ~~parameters or~~ factors, e.g., the load of the boiler~~sulfur content of the fuel supply~~, may be included in such limits to address specific modes of operation during which a particular ~~emission~~ limit may or may not be achievable.

b. The Permittee shall perform this evaluation of SO_2 emissions in accordance with a plan submitted to the Illinois EPA for review and comment. The initial plan shall be submitted to the Illinois EPA no later than 180 days after initial start-up of a boiler.

~~c.~~ The plan shall provide for systematic evaluation of change or variation, within the normal or feasible range of operation, in the following ~~elements~~ as related to the monitored SO_2 emissions:

i. Sulfur content of the fuel supply;

ii. Boiler operating load~~;~~

~~iii. Boiler~~ and combustion settings, including excess oxygen;

~~iv~~iii. Levels of uncontrolled SO_2 and NO_x before the control devices~~SCR~~, as predicted from fuel composition and operating data;

iv. Operating temperature and reagent injection rates for the SCR system;

v~~i~~. Levels of uncontrolled sulfuric acid mist after the SCR, as predicted from operating data;

vi~~i~~. Operating parameters of the electrostatic precipitator (ESP);

vii~~i~~. Operating data and limestone usage rates for the scrubber;

viii~~x~~. Operating parameters of the wet electrostatic precipitator (WESP); and

ix. Opacity, PM, NO_x, and sulfuric acid mist emissions.

~~d~~c. i. The Permittee shall promptly begin this evaluation after a boiler demonstrates compliance with all applicable short-term emission limits as shown by emission testing and monitoring.

ii. With the final report for such compliance demonstration~~At this time~~, the Permittee shall submit an ~~an~~ update to the plan that describes its findings with respect to control of SO_2 emissions during the shakedown of the boilers~~,~~ as it ~~which~~ highlights possible areas of concern for ~~this~~ the detailed evaluation.

~~e~~d. i. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within three years after the initial startup of a boiler. This report shall include proposed alternative limit(s) for SO_2 emissions.

ii. This deadline may be extended by the Illinois EPA for an additional year if the Permittee submits an interim report demonstrating the need for additional time to effectively evaluate SO_2 emissions.

2.1.17 Revision of Total PM_{10} Emission Limit Based on Results of Emission Testing

a. i. The emission limit for PM10 in Condition 2.1.2(b)(i)(B) shall be lowered based on the results of emissions testing unless the Permittee demonstrates and the Illinois EPA concurs, based on an evaluation as provided by Condition 2.1.17, that a lower limit cannot be reliably met without unacceptable consequences, i.e., inability to comply with other emission limits or requirements or significant risk to equipment or personnel, and without unreasonable consequences, i.e., a significant increase in maintenance and repair needed for the boilers while complying with other applicable emission limits or without significant risk to equipment or personnel. For this purpose, the Permittee shall conduct at least four additional emission tests beyond the initial performance test (total of at least five tests) spread out during the period in which the evaluation is being performed.

ii. A. If the Permittee fails to perform the necessary emission testing for evaluation of PM_{10} emissions, the limit for PM_{10} shall automatically be lowered to 0.018 lb/million Btu.

B. If the Permittee fails to complete the evaluation in a timely manner in accordance with Condition 2.1.17(b), the limit for PM_{10} shall automatically be lowered to the greater of (1) 0.018 lb/million Btu or (2) the sum of the average of the results from the required periodic compliance tests (excluding any tests showing noncompliance and any test

results that do not reflect representative operating conditions or otherwise reflect outlying data) and the standard deviation of such results, rounded to two significant digits. (If the statistical evaluation of test results yields a value greater than 0.035 lb/million Btu, i.e., the limit in Condition 2.1.2(b), the limit shall remain at 0.035 lb/million Btu.)

iii. This permit will be revised to set lower limit(s) for PM_{10} emissions (but no lower than the above default limits), if the Illinois EPA, after considering the result of any evaluation performed by the Permittee, finds that the boilers can and should be able to consistently comply with such limit(s) without unreasonable consequences.

b. i. If the Permittee elects to perform an evaluation for PM_{10} emissions, the evaluation shall be performed in accordance with a plan submitted to the Illinois EPA for review and comment. The plan shall provide for evaluation of PM_{10} emissions at moderate load operation of the boiler as well as operation at full load. The initial plan shall be submitted to the Illinois EPA no later than 180 days after initial start-up of a boiler.

ii. A. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within three years after the initial startup of a boiler. This report shall include proposed alternative limit(s) for PM_{10} emissions.

B. This deadline may be extended for an additional year if the Permittee submits an interim report demonstrating the need for additional data to effectively set a revised limit for PM_{10} emissions. During this year, at least two more performance tests for PM_{10} emissions shall be conducted.

CONDITION 2.2: UNIT-SPECIFIC CONDITIONS FOR FUEL AND OTHER BULK MATERIAL HANDLING, PROCESSING AND STORAGE OPERATIONS

2.2.1 Description of Emission Units

The affected units for the purpose of these unit-specific permit conditions are operations that handle coal and other materials in bulk that are involved with the operation of the power plant (including the mine facility) and have the potential for particulate matter emissions, including coal, rock, limestone, and ash. Affected units include receiving, transfer, handling, storage, processing or preparation (crushing, etc.) and loading operations for such materials.

2.2.2 Control Technology Determination

a. Emissions of particulate matter from affected units, other than storage piles, including associated material handling operations, coal-handling operations at the mine facility, and the transfer belt between the mine facility and the power plant facility, shall be controlled with enclosures and aspiration to baghouses or other filtration devices. These control devices shall be operated in accordance with good air pollution control practices to minimize emissions.

b. There shall be no visible fugitive emissions, as defined by 40 CFR 60.671, from storage buildings unless such emissions comply with the requirements of Condition 2.2.3(a).

c. i. ~~Storage piles, c~~Coal handling operations at the mine facility, other than associated with storage piles, and the transfer belt between the mine facility and the power plant facility shall be controlled by enclosure~~,~~ or covers and fogging, material quality, ~~temporary covers,~~ or application of water or other dust suppressants so as to minimize fugitive emissions to the extent practicable.

ii. For this purpose, for each affected unit, either (1) there shall be no visible emissions from the affected unit, as determined in accordance with USEPA Method 22, or (2) a nominal control efficiency for particulate matter emissions of at least 99 percent shall be achieved from the uncontrolled emission rate, as determined using appropriate USEPA emission factors for uncontrolled particulate emissions and engineering analysis and calculations.

d. i. Storage piles, including material handling operations associated with the piles, shall be controlled by application of water or other dust suppressants so as to minimize fugitive emissions to the extent practicable.

ii. A. For this purpose, except for limestone, a nominal control efficiency of at least 90 percent shall be achieved from the uncontrolled emission rate, as

determined using appropriate USEPA emission factors for uncontrolled particulate emissions and engineering analysis and calculations.

B. For limestone, (1) a nominal control efficiency of at least 99 percent shall be achieved, or (2) there shall be no visible emissions from the affected unit, as determined in accordance with USEPA Method 22.

2.2.3 Applicable Federal Emission Standards

a. Affected units engaged in handling limestone shall comply with applicable requirements of the NSPS for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart 000 and related provisions of 40 CFR 60, Subpart A.

i. Pursuant to the NSPS, stack emissions of particulate matter are subject to the following limitations:

A. The rate of emissions shall not exceed 0.05 gram/dscm (0.02 gr/dscf). (40 CFR 60.672(a)(1))

B. The opacity of emissions shall not exceed 7 percent. (40 CFR 60.672(a)(2))

ii. Pursuant to the NSPS, fugitive emissions of particulate matter are subject to the following limitations:

A. The opacity of emissions from grinding mills, screens, (except truck dumping) storage bins, and enclosed truck or railcar loading operations shall not exceed 10 percent. (40 CFR 60.672(b) and (d))

B. The opacity of emissions from crushers shall not exceed 10 percent. (40 CFR 60.672(b))

C. Truck dumping into any screening operation, feed hopper, or crusher is exempt from the above standards. (40 CFR 60.672(d))

b. Affected units engaged in handling and processing coal shall comply with applicable requirements of the NSPS for Coal Preparation Plants, 40 CFR 60, Subpart Y, and related provisions of 40 CFR 60, Subpart A~~. Note: These NSPS are applicable because coal will be processed at the plant by crushing~~.

Pursuant to the NSPS, the opacity of the exhaust from coal processing and conveying equipment, coal storage systems (other than open storage piles), and coal loading systems shall not exceed 20 percent (40 CFR 60.252(c)).

c. At all times, the Permittee shall maintain and operate affected units that are subject to NSPS, including associated air pollution control equipment, in a manner consistent with good air

pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.2.4 Applicable State Emission Standards

a. The emission of smoke or other particulate matter from affected units shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. With respect to emissions of fugitive particulate matter, affected units shall comply with 35 IAC 212.301, which provides that visible emissions of fugitive particulate matter shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

c. The emissions of particulate matter from the affected units other than units excluded by 35 IAC 212.323 (refer to Condition 2.2.5(a)) shall comply with the applicable limit pursuant to 35 IAC 212.321, which rule limits emissions based on the process weight rate of emission units and allows a minimum emission rate of 0.55 lb/hour for any individual unit.

2.2.5 Applicability of Other Regulations

This permit is issued based on the coal piles and associated operations, coal handling operations at the mine facility, and the transfer belt between the mine facility and the power plant facility not being subject to 35 IAC 212.321 pursuant to 35 IAC 212.323, which provides that 35 IAC 212.321 shall not apply to emission units, such as stock piles, to which, because of the disperse nature of such emission units, such rules cannot reasonably be applied~~affected units readily complying with the applicable particulate matter emission limit pursuant to 35 IAC 212.321, which rule limits emissions based on the process weight rate of an unit and allows a minimum emission rate of 0.55 lb/hour for any unit~~.

2.2.6 Operating Requirements

a. i. The power plant facility shall be designed and operated to store bulk materials that have the potential for particulate matter emissions, other than coal, limestone, wetted bottom ash and scrubber sludge, in silos, bins, and buildings, without storage of such material in outdoor piles except on a temporary basis during breakdown or other disruption in the capabilities of the enclosed storage facilities.

ii. Outdoor coal piles shall be equipped and operated with adjustable stacker(s), rotary stacker(s), ~~Coal~~ ladders or other comparable devices to minimize the distance that ~~Coal~~ material drops when added to the pile and minimize the associated particulate matter emissions.

b. i. The Permittee shall carry out control of fugitive particulate matter emissions from affected units in accordance with a written operating program describing the measures being implemented in accordance with Conditions 2.2.2 and 2.2.6(a) to control emissions at each area of the plant with the potential to generate ~~significant quantities~~ more than trivial amounts of such emissions, which program shall be kept current.

A. This program shall include maps or diagrams indicating the location of affected units with the potential for fugitive emissions, accompanied by the following information for each such unit: a general description of the unit, its size (area or volume), the expected level of activity, the nature and extent of enclosure, and a description of installed air pollution control equipment.

B. This program shall include a detailed description of any additional emission control techniques (e.g., water or surfactant spray) including: typical flow of water and additive concentration; rate or normal frequency at which measures would be implemented; circumstances in which the measures would not be implemented e.g., adequate surface moisture on material; triggers for additional control, e.g. observation of 10 percent or greater opacity; and calculated control efficiency.

ii. The Permittee shall submit copies of this operating program to the Illinois EPA for review as follows:

A. A program for the construction of the plant shall be submitted within 30 days of beginning actual construction of the source.

B. The initial operating program for plant shall be submitted within 90 days of initial start up of the plant.

C. Significant amendments to the program by the Permittee shall be submitted within 30 days.

iii. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of fugitive emissions.

c. The Permittee shall conduct inspections of affected units on at least a monthly basis with personnel not directly responsible for the day-to-day operation of these units, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented. When the plant begins to handle bulk materials in the affected units, these inspections shall include observation for the presence of visible emissions, performed in accordance with USEPA Method 22, from~~of~~ buildings and structures in which affected units are located and from units from which the Permittee has elected to demonstrate no visible emissions~~for the occurrence of visible emissions~~.

2.2.7 Emission Limitations

Emissions from affected units shall not exceed the limitations in Attachment 1, Table II and the limitations specified in the records required by Condition 2.2.11(a).

2.2.8 Emission Testing

a. i. A. Within 60 days after achieving the maximum production rate at which an affected emission unit subject to NSPS will be operated, but not later than 180 days after initial startup of each such unit, the Permittee shall have emissions tests conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.

B. This period of time may be extended by the Illinois EPA upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of an affected unit, provided that initial emissions testing required by the NSPS has been completed for the unit and the test report has been submitted to the Illinois EPA.

ii. In addition to the initial emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for an affected unit within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. The following methods and procedures shall be used for emission testing:

i. The following USEPA methods and procedures shall be used for particulate matter and opacity measurements for the affected units subject to 40 CFR Part 60, Subpart OOO, as specified in 40 CFR 60.675:

Particulate Matter	Method 5 or 17
Opacity	Method 9

ii. The following USEPA methods and procedures shall be used for particulate matter and opacity measurements for the affected units subject to 40 CFR 60, Subpart Y, as specified in 40 CFR 60.254:

Particulate matter - Method 5, the sampling time and sample volume for each run shall be at least 60 minutes and 30 dscf. Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

Opacity - Method 9, opacity measurements shall be performed by a certified observer.

c. Test plan(s), test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 4.2.

2.2.9 Operational Monitoring and Measurements

a. The Permittee shall install, operate and maintain systems to measure the pressure drop across each baghouse used to control affected units.

Note: This requirement does not apply to bin vent filters and other similar filtration devices.

b. The Permittee shall maintain the records of the measurements made by these systems and records of maintenance and operational activity associated with the systems.

2.2.10 Emissions Monitoring

None

2.2.11 Recordkeeping

a. The Permittee shall maintain files, which shall be kept current, that contain:

i. A. For the baghouses or other filter devices associated with affected units, design specifications for each device (type of unit, maximum design exhaust flow (acfm or scfm), filter area, type of filter cleaning, performance guarantee for particulate exhaust loading in gr/scf, etc.), the manufacturer's recommended operating and maintenance procedures for the device, and design specification for the filter material in each device (type of material, surface treatment(s) applied to material, weight, performance guarantee, warranty provisions, etc.).

~~ii~~B. For each baghouse, the normal range of pressure drop across the device and the minimum and maximum safe

pressure drop for the device, with supporting documentation.

ii. For affected units that are not controlled with baghouses or other filter devices, a detailed description of the work practices used to control emissions of particulate matter.

iii. The designated particulate matter emission rate, in pounds/hour and tons/year, from ~~each~~ the ~~stack or vent associated with the~~ affected unit~~s~~ with supporting calculations and documentation, including detailed documentation for the level of emissions control achieved through the work practices that are used to control particulate matter emissions~~, other than those units individually addressed by Attachment 1, Table II~~. For each category of affected unit (e.g., coal and limestone receiving and handling), the sum of these emission rates ~~and the hourly limitations for any units that are addressed individually~~ shall not exceed the ~~hourly sub~~totals in Table II for the category of affected unit. (See also Condition 2.2.2 and 2.2.7.)

b. The Permittee shall keep records for the amount of bulk materials received by or shipped from the plant by category or type of material (tons/month).

c. For affected units that are subject to NSPS, the Permittee shall fulfill applicable recordkeeping requirements of the NSPS, 40 CFR 60.7 and 60.676.

d. The Permittee shall keep inspection and maintenance logs for each control device associated with an affected unit.

e. The Permittee shall maintain records documenting implementation of the fugitive emission operating program required by Condition 2.2.6, including:

i. Records for inspections required by Condition 2.2.6(c) to verify the implementation of continuous control measures (that are to be in place whenever an affected unit is in operation), including the date and time, the name of the responsible party, identification of the affected unit(s) that were inspected, and the observed condition of control measures;

ii. Records for the implementation of intermittent control measures, i.e., application of suppressants including identification of the affected unit, identification of the suppressant, application rate, dates or date and time of applications, and quantity of total suppressant applied;

iii. Records for application of physical or chemical control agents other than water including the name of the agent; target application concentration, if diluted with water;

target application rate; and usage of the agent, gallons/month; and

iv. A log recording incidents when specified control measures were not present or were not used for an affected unit when it was in operation, including description, date, duration, means by which the incident was identified, and a statement of explanation.

f. The Permittee shall record any period during which an affected unit was in operation when its baghouse was not in operation or was not operating properly, as follows:

i. Each period when the pressure drop of a baghouse, as measured pursuant to Condition 2.2.9, deviated outside the levels set as good air pollution control practices (date, duration and description of the event).

ii. Each period when a baghouse failed to operate properly, which records shall include at least the information specified by Condition 4.3.

iii. Each period during which an affected unit deviated from the requirements of this permit, including applicable emission limits, which records shall include at least the information specified by Condition 4.3 and an estimate of the additional emissions of particulate matter that resulted, if any, with supporting calculations.

g. The Permittee shall keep records for all opacity observations made in accordance with USEPA Method 9 for affected units that it conducts or that are conducted on its behalf by individuals who are certified to make such observations. For each occasion on which such observations are made, these records shall include the identity of the observer, a description of the various observations that were made, the observed opacity from individual units, and copies of the raw data sheets for the observations.

h. The Permittee shall maintain the following records for the emissions of the affected units:

Records of emissions of particulate matter based on operating data for the unit(s) and appropriate emission factors, with supporting documentation and calculations.

2.2.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable emission standards or operating requirements for the affected units that continue* for more than 24 hours. These notifications shall include the information specified by Condition 4.5.

* For this purpose, time shall be measured from the start of a particular event. The absence of a deviation for a short period shall not be considered to end the event if the deviation resumes. In such circumstances, the event shall be considered to continue until corrective actions are taken so that the deviation ceases or the Permittee takes the affected unit out of service for repairs.

2.2.13 Reporting

a. The Permittee shall submit quarterly reports to the Illinois EPA for all deviations from emission standards, including standards for visible emissions and opacity, and operating requirements set by this permit. These notifications shall include the information specified by Condition 4.5.

b. These reports shall also address any deviations from applicable compliance procedures established by this permit for affected units.

2.2.14 ~~Operating~~ Flexibility

The Permittee is authorized, as follows, to construct and operate affected units that ~~are~~ differ~~ent~~ from those described in the application without obtaining ~~prior~~ further approval by the Illinois EPA. This condition does not affect the Permittee's obligation to comply with ~~the~~ all applicable requirements for affected units:

a. This authorization only extends to changes that result from the detailed design of the plant and any refinements to that design of the affected units that occur during construction and the initial operation of the plant.

b. With respect to air quality impacts, these changes shall generally act to improve dispersion and reduce impacts, as emissions from individual units are lowered, units are moved apart or away from the fence line, stack heights are increased, and heights of nearby structures ~~is~~ are reduced.

c. The Permittee shall notify the Illinois EPA prior to proceeding with any~~,~~ changes. In this notification, the Permittee shall describe the proposed changes and explain why the proposed changes will act to reduce impacts, with detailed supporting documentation.

d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the overall effect of the changes is to reduce air quality impacts, so that impacts from affected units remain at or below those predicted by the air quality analysis accompanying the application.

CONDITION 2.3: UNIT-SPECIFIC CONDITIONS FOR COOLING TOWERS

2.3.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are the two cooling towers associated with the steam cycle for each boiler. The cooling towers are sources of particulate matter because of mineral material present in the water, which is emitted to the atmosphere due to water droplets that escape from the cooling tower or completely evaporate. The emissions of particulate matter are controlled by ~~mist~~ drift eliminators, which collect water droplets entrained in the air exhausted from the cooling towers.

2.3.2 Control Technology Determination

The affected units shall be equipped, operated, and maintained with drift eliminators designed to limit the loss of water droplets from the unit to not more than 0.0005 percent of the circulating water flow.

2.3.3 Applicable Federal Emission Standards

None

2.3.4 Applicable State Emission Standards

Visible emission of fugitive particulate matter from the affected units shall comply with ~~the provisions of~~ 35 IAC 212.301, which provides that visible emissions of fugitive particulate matter shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except as provided by 35 IAC 212.314.

2.3.5 Applicability of Other Regulations

None

2.3.6 Operating Requirements

a. Chromium-based water treatment chemicals, as defined in 40 CFR 63.401, shall not be used in the affected units.

b. i. A. The Permittee shall equip the affected units with appropriate features, such as steam reheat, to enable them to be operated without a significant contribution to fogging and icing on offsite roadways during periods when fogging or icing are present in the area or weather conditions are conducive to fogging or icing.

B. Notwithstanding the above, the Permittee need not include such features in the affected units if it demonstrates by appropriate analysis, as approved in

writing by the Illinois EPA, that the cooling towers will be sited and designed and can be operated such that additional features are not needed to prevent a significant contribution to fogging and icing on offsite roadways.

ii. No later than 30 days after completion of the detailed design of the affected units and at least 60 days before construction of the affected units is begun, the Permittee shall submit a summary of the detailed design to the Illinois EPA and either:

A. A detailed description of the physical features that will be included in the affected units to satisfy Condition 2.3.6(b)(i)(A), the practices that would be followed for such features, and a demonstration that such features will be sufficient to prevent a significant contribution to fogging and icing on offsite roadways, for review and comment by the Illinois EPA; or

B. An analysis pursuant to Condition 2.3.6(b)(i)(B), including any operational practices that would be followed for the affected units to prevent a significant contribution to fogging and icing on offsite roadways, for review and approval by the Illinois EPA.

c. The Permittee shall operate and maintain the affected units, including the drift eliminators, in a manner consistent with good air pollution control practices for minimizing emissions.

d. The Permittee shall operate and maintain the affected units in accordance with written operating procedures, which procedures shall be kept current. These procedures shall address the practices that will be followed as good air pollution control practices and the actions that will be followed to prevent a significant contribution to icing and fogging on offsite roadways.

2.3.7 Emission Limitations

The total annual emissions of particulate matter from the affected units shall not exceed 15.0 tons/year, as determined by appropriate engineering calculations.

2.3.8 Emission Testing

None

2.3.9 Work Practices

The Permittee shall maintain the drift eliminators in the affected units in a manner consistent with good air pollution control practices for minimizing emissions.

2.3.10 Operational Monitoring and Measurements

a. The Permittee shall measure the total dissolved solids content in the water being circulated in the affected units on at least a monthly basis. Measurements of the total dissolved solids content in the wastewater discharge associated with the affected units, as required by a National Pollution Discharge Elimination System permit, may be used to satisfy this requirement if the effluent has not been diluted or otherwise treated in a manner that would significantly reduce its total dissolved solids content.

b. Upon written request by the Illinois EPA, the Permittee shall promptly have the water circulating in the affected units sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).

2.3.11 Records

a. The Permittee shall keep a file that contains:

i. The design loss specification for the drift eliminators installed in each affected unit.

ii. The suppliers' recommended procedures for inspection and maintenance of the drift eliminators.

iii. The operating factors, if any, used to determine the amount of water circulated in the affected units or the particulate matter emissions from the affected units, with supporting documentation.

iv. Copies of the Material Safety Data Sheets or other comparable information from the suppliers for the various water treatment chemicals that are added to the water circulated in the affected units.

b. The Permittee shall keep the following operating records for the affected units:

i. The amount of water circulated in the affected units, gallons/month. As an alternative to direct data for water flow, these records may contain other relevant operating data for the units (e.g., water flow to the units) from which the amount of water circulated in the units may be reasonably determined.

ii. Each occasion when the Permittee took action to prevent a significant contribution to fogging or icing from the affected units, including the date and duration, the action or actions that were taken, the weather conditions that triggered such actions, and the weather conditions when such actions were terminated.

c. The Permittee shall keep inspection and maintenance logs for the drift eliminators installed in each affected unit.

d. The Permittee shall maintain records for the particulate matter emissions of the affected units based on the above records, the measurements required by Condition 2.3.10(a), and appropriate USEPA emission estimation methodology and emission factors, with supporting calculation.

2.3.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements that are not addressed by the regular reporting required by Condition 2.3.13. These notifications shall include the information specified by ~~General~~ Condition 4.5.

2.3.13 If the cooling towers are equipped with features to address fogging and icing, as addressed by Condition 2.3.6(b), ~~The~~ the Permittee shall submit quarterly reports to the Illinois EPA summarizing the records required by Condition 2.3.~~12~~11(b)(ii) and identifying any deviation from established practices for the use of such features.

CONDITION 2.4: UNIT-SPECIFIC CONDITIONS FOR THE AUXILIARY BOILER

2.4.1 Description of Emission Unit

The affected unit for the purpose of these unit-specific conditions is the auxiliary boiler for the plant, which is fired with natural gas. The auxiliary boiler is used to produce low-pressure steam to maintain the plant when the coal-fired boilers are not in operation and to support the startup of the coal-fired boilers.

2.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Boiler	Natural Gas-Fired Boiler, with Nominal Rated Heat Input Capacity of 245 Million Btu/Hr	Low-NO_x Burner

2.4.3 Control Technology Determination

a. The only fuel burned in the auxiliary boiler shall be natural gas.

b. The emissions from the affected boiler shall not exceed the following limits except during startup, shutdown and malfunction as addressed by Condition 2.4.3(c).

i. NO_x – 0.167 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.4.9 and equipment operation.

ii. CO – 0.11 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.4.9 and equipment operation.

iii. VOM – 0.013 lb/million Btu.

This limit shall apply as a 3-hour block average, with compliance determined by emission testing in accordance with Condition 2.4.9 and equipment operation.

c. The Permittee shall use reasonable practices to minimize emissions during startup, shutdown and malfunction of the auxiliary boiler, including:

i. Operation of the boiler and associated air pollution control equipment in accordance with written operating procedures that include startup, shutdown and malfunction plan(s); and

ii. Inspection, maintenance and repair of the boiler and associated air pollution control equipment in accordance with written maintenance procedures.

2.4.4 Applicable Federal Emission Standards

a. The auxiliary boiler is subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db, and related provisions in Subpart A.

b. At all times, the Permittee shall maintain and operate the auxiliary boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

c. The auxiliary boiler is not subject to NO_x emission standards under the NSPS because the annual capacity factor shall be less than 10 percent for natural gas.

2.4.5 Applicable State Emission Standards

a. The emission of smoke or other particulate matter from the auxiliary boiler shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. The emission of carbon monoxide (CO) into the atmosphere from the auxiliary boiler shall not exceed 200 ppm, corrected to 50 percent excess air. [35 IAC 216.121]

2.4.6 Applicability of other Regulations

This permit is issued based on the auxiliary boiler not being an electrical generating unit, so that provisions of the federal Acid Rain Program are not applicable to the boiler.

2.4.7 Operating Requirements

a. The auxiliary boiler shall only be fired with natural gas.

b. i. The annual capacity factor of the affected boiler, as defined by 40 CFR 60.41b, shall not exceed 10 percent.

ii. Following the shakedown period for the coal-fired boilers, the auxiliary boiler shall not operate for more than 500 hours per year. Compliance with this limit shall be determined from a running total of 12 months of data.

c. The rated heat input of the auxiliary boiler shall not exceed 245 million Btu/hour.

2.4.8 Emission Limitations

Emissions of NO_x, VOM, CO, and PM from the auxiliary boiler shall not exceed 10.3, 0.8, 6.8, and 0.5 tons/year, respectively. Compliance with these annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

2.4.9 Emission Testing

a. i. Within 60 days after achieving the maximum production rate at which~~,~~ the auxiliary boiler will be operated, but not later than 180 days after initial startup of the boiler, the Permittee shall have tests conducted for opacity and emissions of NO_x, CO and VOC, as follows, at its expense by an approved testing service while the boiler is operating at maximum operating load and other representative operating conditions.

ii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for the auxiliary boiler within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. The following methods and procedures shall be used for testing, unless otherwise specified or approved by the Illinois EPA.

Opacity	Method 9
Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
Nitrogen Oxides	Method 19 as specified in 40 CFR 60.48b
Carbon Monoxide	Method 10
Volatile Organic Compounds	Methods 25A and 18

c. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with ~~the~~ Condition 4.2.

2.4.10 Operational Monitoring and Measurements

None

2.4.11 Emission Monitoring

None

2.4.12 Recordkeeping

a. The Permittee shall keep a file that contains:

The rated heat input capacity of the auxiliary boiler as provided by the manufacturer or subsequently determined based on the demonstrated heat input capacity of the boiler.

b. The Permittee shall maintain the following operating records for the auxiliary boiler:

i. An operating log or other record that among other matters identifies each period when the boiler is operated and includes the information specified by 40 CFR 60.7(b).

ii. A summary of operating hours (hours/month and hours/year) for all operation and operation when a coal boiler was operating.

iii. Natural gas usage on a monthly basis (cubic feet).

c. The Permittee shall maintain a maintenance and repair log for the auxiliary boiler.

d. The Permittee shall keep records of the annual NO_x, VOM, CO and PM emissions from the auxiliary boiler, based on fuel consumption and applicable emission factors, with supporting calculations.

2.4.13 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements. These notifications shall include the information specified by Condition 4.5.

2.4.14 Reporting

a. The Permittee shall fulfill applicable reporting requirements of the NSPS, 40 CFR 60.7 and 60.49b, for the auxiliary boiler by sending applicable notifications and reports to the Illinois EPA, including:

~~a. The Permittee shall submit n~~Notification of the date of initial startup of the boiler, as provided by 40 CFR 60.7. This notification shall include: (1) the design heat input of the boiler, and (2) the annual capacity factor at which the Permittee anticipates operating the boiler. (40 CFR 60.49b(a).

2.4.15 Compliance Procedures

Compliance of the auxiliary boiler with the emission limits in Condition 2.4.8 shall be based on the operating records required by Condition 2.4.12 and appropriate emission factors.

a. The emission factors for NO_x, CO, and VOM shall be based on the results of the emission testing required by Condition 2.4.9.

b. A published USEPA emission factor, as follows, may be used for PM when the boiler operates properly.

PM 0.0076 lb/million Btu

CONDITION 2.5: UNIT-SPECIFIC CONDITIONS FOR ROADWAYS AND OTHER OPEN AREAS

2.5.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are roadways, parking areas, and other open areas at the plant, which may be sources of fugitive particulate matter due to vehicle traffic or wind blown dust.

2.5.2 Control Technology Determination

a. i. Good air pollution control practices shall be implemented to minimize and significantly reduce nuisance dust from affected units. After construction of the plant is complete, these practices shall provide for pavement on all regularly traveled roads and treatment (flushing, vacuuming, dust suppressant application, etc.) of paved and unpaved roads and areas that are routinely subject to vehicle traffic for very effective and effective control of dust, respectively (nominal 90 percent control for paved roads and areas and 80 percent control for unpaved roads and areas).

ii. For this purpose, roads that serve a main office, employee parking areas or are used on a daily basis by operating and maintenance personnel for the plant in the course of their typical duties, roads that experience heavy use during regularly occurring maintenance of the power plant facility during the course of a year, shall all be considered to be subject to regular travel and are required to be paved. Regularly traveled roads shall be considered to be subject to routine vehicle traffic except as they are used primarily for periodic maintenance and are currently inactive or as traffic has been temporarily blocked off. Other roads shall be considered to be routinely traveled if activities are occurring such that they are experiencing significant vehicle traffic.

b. The handling of material collected from any affected unit by sweeping or vacuuming trucks shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods to control emission of particulate matter.

2.5.3 Applicable Federal Emission Standards

None

2.5.4 Applicable State Emission Standards

a. Affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive particulate matter shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the

wind speed is greater than 25 miles per hour, as provided by 35 IAC 212.314.

2.5.5 Applicability of Other Regulations

This permit reflects a determination by the Illinois EPA that the source is a power plant or electrical generating operation so that the provisions of 35 IAC 212.306 are not applicable to roads and parking areas at the source. [35 IAC 212.306]

2.5.6 Operating Requirements

a. The Permittee shall carry out control of fugitive particulate matter emissions from affected units in accordance with a written operating program describing the measures being implemented in accordance with Conditions 2.5.2 and 2.5.4 to control emissions at each unit with the potential to generate significant quantities of such emissions, which program shall be kept current.

i. This program shall include maps or diagrams indicating the location of affected units with the potential to generate significant quantities of fugitive particulate matter, with description of the unit (length, width, surface material, etc.) and volume and nature of expected vehicle traffic, or other activity on such unit, and an identification of any roadways that are not considered routinely traveled, with justification.

ii. This program shall include a detailed description of the emissions control technique (e.g., vacuum truck, water spray, surfactant spray, water flushing, dust suppressant application, or sweeping) for the affected unit, including: typical application rate; type and concentration of additives; normal frequency with which measures would be implemented; circumstances, in which the measure would not be implemented, e.g., recent precipitation; triggers for additional control, e.g., observation of 10 percent opacity; and calculated control efficiency for particulate matter emissions.

b. The Permittee shall submit copies of this operating program to the Illinois EPA for review as follows:

i. A program addressing the construction of the plant shall be submitted within 30 days of beginning actual construction of the source.

ii. A program addressing the operation of the plant shall be submitted within 90 days of initial start up of the plant.

iii. Significant amendments to the program by the Permittee shall be submitted within 30 days of the date that the amendment is made.

c. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of fugitive particulate emissions.

d. The Permittee shall conduct inspections of affected units on at least a weekly basis during construction of the plant and on a monthly basis thereafter with personnel not directly responsible for the day-to-day implementation of the fugitive dust control program, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

2.5.7 Emission Limitations

The total annual emissions of particulate matter from the affected units shall not exceed 9.1 tons/year, as determined by appropriate engineering calculations.

2.5.8 Emission Testing

None

2.5.9 Operational Monitoring and Measurements

None

2.5.10 Emission Monitoring

None

2.5.11 Records

a. The Permittee shall keep a file that contains:

i. The operating factors, if any, used to determine the amount of activity associated with the affected units or the particulate matter emissions from the affected units, with supporting documentation.

ii. The designated particulate matter emission rate, in tons/year, from each category of emission unit (e.g., traffic associated with receiving of limestone), with supporting calculations and documentation. The sum of these rates shall not exceed the annual limit on emissions in Condition 2.5.7.

b. The Permittee shall maintain records documenting implementation of the operating program required by Condition 2.5.6, including:

i. For each treatment of an affected unit or units, the name and location of the affected unit(s), the date and time,

and the identification of the truck(s) or treatment equipment used;

ii. For each application of water or chemical solution by truck: application rate of water or suppressant, frequency of each application, width of each application, total quantity of water or chemical used for each application and, for each application of chemical solution, the concentration and identity of the chemical;

iii. For application of physical or chemical control agents: the name of the agent, application rate and frequency, and total quantity of agent and, if diluted, percent of concentration, used each day; and

iv. A log recording incidents when control measures were not used and incidents when additional control measures were used due to particular activities, including description, date, a statement of explanation, and expected duration of ~~the~~ such circumstances.

c. The Permittee shall record any period during which an affected unit was not properly controlled as required by this permit, which records shall include at least the information specified by Condition 4.3 and an estimate of the additional emissions of particulate matter that resulted, if any, with supporting calculations.

d. The Permittee shall maintain records for the particulate matter emissions of the affected units based on plant operating data, the above records for the affected unit including data for implementation of the operating program, and appropriate USEPA emission estimation methodology and emission factors, with supporting calculations.

2.5.12 Notifications

The Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements for affected units that are not addressed by the regular reporting required below. These notifications shall include the information specified by Condition 4.5.

2.5.13 Reporting

The Permittee shall submit quarterly reports to the Illinois EPA for affected units stating the following: the dates any necessary control measures were not implemented; a listing of those control measures; the reasons that the control measures were not implemented; and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar quarter~~s~~.

SECTION 3: TRADING PROGRAM CONDITIONS

CONDITION 3.1: ACID RAIN PROGRAM REQUIREMENTS

a. Applicability

Under Title IV of the federal ~~the~~ Clean Air Act, Acid Deposition Control, this plant or source is an affected source and the following emission units at the source are affected units for acid deposition:

Boilers 1 and 2

Note: Title IV of the Clean Air Act, and other laws and regulations promulgated thereunder, establish requirements for affected sources related to control of emissions of pollutants that contribute to acid rain, i.e., SO_2 and NO_x. For purposes of this permit, these requirements are referred to as Title IV provisions.

b. Applicable Emission Requirements

The owners and operators of the source shall not violate applicable Title IV provisions. In particular:

i. SO_2 emissions ~~of~~ from the affected units shall not exceed any allowances that the source lawfully holds under Title IV provisions. [Environmental Protection Act, Sections 39.5(7)(g) and (17)(1)]

Note: Affected sources must hold SO_2 allowances to account for the SO_2 emissions from affected units at the source that are subject to Title IV provisions. Each allowance is a limited authorization to emit up to one ton of SO_2 emissions during or after a specified calendar year. The possession of allowances does not authorize exceedances of applicable emission standards or violations of the SO_2 ambient air quality standards.

ii. NO_x emissions from each affected unit shall not exceed the applicable emission standard pursuant to 40 CFR Part 76.

c. Monitoring, Recordkeeping and Reporting

The owners and operators of the source and, to the extent applicable, their designated representative, shall comply with applicable requirements for monitoring, recordkeeping and reporting specified by Title IV provisions, including 40 CFR Part 75. [Environmental Protection Act, Sections 39.5(7)(b) and 17(m)]

Note: As already addressed in Condition 2.1.9, the following emission determination methods ~~would~~ will be used for the affected units at this source.

NO_x: Continuous Emissions Monitoring (40 CFR 75.12)
SO_2: Continuous Emissions Monitoring (40 CFR 75.11)
Opacity: Continuous ~~Emissions~~ Monitoring (40 CFR 75.14)

O_2/CO_2: Continuous Monitoring for Oxygen or Carbon Dioxide (40 CFR Part 75.13)

d. Acid Rain Permit

The owners and operators of the source shall comply with the terms and conditions of the source's Acid Rain permit. (Environmental Protection Act, Section 39.5(17)(1)]

Note: The source is subject to an Acid Rain permit, which was issued pursuant to Title IV provisions, including Section 39.5(17) of the Environmental Protection Act. Affected sources must be operated in compliance with their Acid Rain permits. A copy of the initial Acid Rain permit is included as an attachment to this permit. Revisions and modifications of this Acid Rain permit, including administrative amendments and automatic amendments (pursuant to Sections 408(b) and 403(d) of the CAA or regulations thereunder) are governed by Title IV provisions, as provided by Section 39.5(13)(e) of~~,~~ the Environmental Protection Act, and revision or renewal of the Acid Rain permit may be handled separately from this permit.

e. Coordination with Other Requirements

i. This permit does not contain any conditions that are intended to interfere with or modify the requirements of Title IV provisions. In particular, this permit does not restrict the flexibility under Title IV provisions of the owners and operators of this source to amend their Acid Rain compliance plan. [Environmental Protection Act, Section 39.5(17)(h)~~)~~]

ii. Where another applicable requirement of this permit is more stringent than an applicable requirement of Title IV provisions, both requirements are enforceable and the owners and operators of the source shall comply with both requirements. [Environmental Protection Act, Section 39.5(7)(h)]

CONDITION 3.2: NO_x TRADING PROGRAM

a. Description of NO_x Trading Program

The NO_x Trading Program is~~,~~ a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget in order to contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by ~~the~~ this program, as required by Section 110 of the CAA. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

An electrical generating unit~~s~~ (EGU) that is subject to the NO_x Trading Program is referred to as a "budget EGU." Sources that have one or more EGU or other units subject to the NO_x Trading Program are referred to as budget sources.

The NO_x Trading Program controls NO_x emissions from budget EGUs and other budget units during a seasonal control period from May 1 through September 30 of each year, when weather conditions are conducive to formation of ozone in the ambient air. ~~(In 2004, the first year that the NO_x Trading Program is in effect, the control period will be May 31 through September 30.)~~ By November 30 of each year, the allowance transfer deadline, each budget source must hold "NO_x allowances" for the actual NO_x emissions of its budget units during the preceding control period. The USEPA will then retire NO_x allowances in the source's accounts in amounts equivalent to its seasonal emissions. If a source does not have sufficient allowances in its accounts, USEPA would subtract allowances from the source's future allocation for the next control period and impose other penalties as appropriate. Stringent monitoring procedures developed by USEPA apply to budget units to assure that NO_x emissions are accurately determined.

The number of NO_x allowances available for budget sources is set by the overall budget for NO_x emissions established by USEPA. This budget requires a substantial reduction in NO_x emissions from historical levels as necessary to meet air quality goals. In Illinois, existing budget sources initially receive their allocation or share of the NO_x allowances budgeted for EGUs in an amount determined by rule [35 IAC Part 217, Appendix F]. Between 2007 and 2011, the allocation mechanism for existing EGUs gradually shifts to one based on the actual utilization of EGU in preceding control periods. New budget EGUs, for which limited utilization data may be available, may obtain NO_x allowances from the new source set-aside (NSSA), a portion of the overall budget reserved for new EGUs.

In addition to directly receiving or purchasing NO_x allowances as described above, budget sources may transfer NO_x allowances from one of their units to another. They may also purchase allowances in the marketplace from other sources that are willing to sell allowances that they have received. Each budget source must designate an account representative to handle all its allowance transactions. The USEPA,

in a central, national system, ~~will~~ maintains allowance accounts and record transfer of allowances among accounts.

The ability of sources to transfer allowances ~~will~~ serves to minimize the costs of reducing NO_x emissions from budget units to comply with the overall NO_x budget. In particular, the NO_x emissions of budget units that may be most economically controlled will be targeted by sources for further control of emissions. This will result in a surplus of NO_x allowances from those units that can be transferred to other units at which it is more difficult to control NO_x emissions. Experience with reduction of SO_2 emissions under the federal Acid Rain program has shown that this type of trading program not only achieves regional emission reductions in a more cost-effective manner, but also results in greater overall reductions than application of traditional emission standards to individual emission units.

The USEPA developed the plan for the NO_x Trading Program with assistance from affected states. Illinois rules for the NO_x Trading Program for EGUs are located in 35 IAC Part 217, Subpart W and have been approved by the USEPA. These rules provide for interstate trading, as mandated by Section 9.9 of the Environmental Protection Act. Accordingly, these rules refer to and rely upon federal rules at 40 CFR Part 96, which have been developed by USEPA for certain aspects of the NO_x Trading Program, and which an individual state must follow to allow for interstate trading of NO_x allowances.

Note: This narrative description of the NO_x Trading Program is for informational purposes only and is not enforceable.

b. Applicability

The following emission units at this source are budget EGUs for purposes of the NO_x Trading Program. Accordingly, this source is a budget source and the Permittee is the owner or operator of a budget source and budget EGU. In this condition, these emission units are addressed as budget EGU.

Boiler 1
Boiler 2

c. General Provisions of the NO_x Trading Program

i. This source and the budget EGUs at this source shall comply with all applicable requirements of Illinois' NO_x Trading Program, i.e., 35 IAC Part 217, Subpart W, and 40 CFR Part 96 (excluding 40 CFR 96.4 (b) and 96.55 (c), and excluding 40 CFR 96, Subparts C, E and I), pursuant to 35 IAC 217.756(a) and 217.756(f)(2).

ii. Any provision of the NO_x Trading Program that applies to a budget source (including any provision applicable to the account representative of a budget source) shall also apply to the owner or operator of such budget sources and to the owner and operator of each budget EGU at the source, pursuant to 35 IAC 217.756(f)(3).

iii. Any provision of the NO_x Trading Program that applies to a budget EGU (including any provision applicable to the account representative of a budget EGU) shall also apply to the owner and operator of such budget EGU, pursuant to 35 IAC 217.756(f)(4).

d. Requirements for NO_x Allowances

i. By November 30 of each year, the allowance transfer deadline, the account representative of each budget EGU at this source shall hold allowances available for compliance deduction under 40 CFR 96.54 in the budget EGUs compliance account or the source's overdraft account in an amount that shall not be less than the budget EGUs total tons of NO_x emissions for the preceding control period, rounded to the nearest whole ton, as determined in accordance with 40 CFR 96, Subpart H, plus any number necessary to account for actual utilization (e.g., for testing, start-up, malfunction, and ~~shut down~~ shutdown under 40 CFR 96.42(e) for the control period, pursuant to 35 IAC 217.756(d)(1)). For purposes of this requirement, an allowance may not be utilized for a control period in a year prior to the year for which the allowance is allocated, pursuant to 35 IAC 217.756(d)(5).

ii. The account representative of a budget EGU that has excess emissions in any control period, i.e., NO_x emissions in excess of the number of NO_x allowances held as provided above, shall surrender the allowances as required for deduction under 40 CFR 96.54(d)(1), pursuant to 35 IAC 217.756(f)(5). In addition, the owner or operator of a budget EGU that has excess emissions shall pay any fine, penalty, or assessment, or comply with any other remedy imposed under 40 CFR 96.54(d)(3) and the Environmental Protection Act, pursuant to 35 IAC 217.756(f)(6). Each ton of NO_x emitted in excess of the number of NO_x allowances held as provided above for each budget EGU for each control period shall constitute a separate violation of 35 IAC Part 217 and the Environmental Protection Act, pursuant to 35 IAC 217.756(d)(2).

iii. An allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program is a limited authorization to emit one ton of NO_x in accordance with the NO_x Trading Program. As explained by 35 IAC 217.756(d)(6), no provision of the NO_x Trading Program, the budget permit application, the budget permit, or a retired unit exemption under 40 CFR 96.5 and no provision of law shall be construed to limit the authority of the United States or the State of Illinois to terminate or limit this authorization. As further explained by 35 IAC 217.756(d)(7), an allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program does not constitute a property right. As provided by 35 IAC 217.756(c)(4), allowances shall be held, deducted from, or transferred among allowance accounts in accordance with 35 IAC Part 217, Subpart W, and 40 CFR 96, Subparts F and G.

e. Monitoring Requirements for Budget EGUs

i. The Permittee shall comply with the monitoring requirements of 40 CFR Part 96, Subpart H, for each budget EGU and the compliance of each budget EGU with the emission limitation under Condition 3 (d)(i) shall be determined by the emission measurements recorded and reported in accordance with 40 CFR 96, Subpart H, pursuant to 35 IAC 217.756(c)(1), (c)(2) and (d)(3).

ii. The account representative for the source and each budget EGU at the source shall comply with those sections of the monitoring requirements of 40 CFR 96, Subpart H, applicable to an account representative, pursuant to 35 IAC 217.756(c)(l) and (d)(3).

f. Recordkeeping Requirements for Budget EGUs

Unless otherwise provided below, the Permittee shall keep on site at the source each of the following documents for a period of at least five years from the date the document is created. This period may be extended for cause at any time prior to the end of the five years, in writing by the Illinois EPA or the USEPA (35 IAC 217.756(e)(1)).

i. The account certificate of representation of the account representative for the source and each budget EGU at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 40 CFR 96.13, as provided by 35 IAC 217.756 (e)(1)(A). These certificates and documents must be retained on site at the source for at least five years after they are superseded because of the submission of a new account certificate of representation changing the account representative.

ii. All emissions monitoring information, in accordance with 40 CFR 96, Subpart H, (provided that to the extent that 40 CFR 96, Subpart H, provides for a three year period for retaining records, the three year period shall apply,) pursuant to 35 IAC 217.756(e)(1)(B).

iii. Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Trading Program or documents necessary to demonstrate compliance with requirements of the NO_x Trading Program, pursuant to 35 IAC 217.756(e)(1)(C).

iv. Copies of all documents used to complete a budget permit application and any other submission under the NO_x Trading Program, pursuant to 35 IAC 217.756(e)(1)(D).

g. Reporting Requirements for Budget EGUs

i. The account representative for this source and each budget EGU at this source shall submit to the Illinois EPA and USEPA the reports and compliance certifications required under the NO_x

Trading Program, including those under 40 CFR 96, Subparts D and H and 35 IAC 217.774, pursuant to 35 IAC 217.756(e)(2).

ii. These submittals need only be signed by the designated representative, who may serve in place of the responsible official for this purpose as provided by ~~the~~ Section 39.5(1) of the Environmental Protection Act, and submittals to the Illinois EPA need only be made to the Illinois EPA, Air Compliance Section.

h. Allocation of NO_x Allowances to Budget EGUs

i. For the first four control periods that a budget EGU identified in Condition 3.2(b) operates, it will not be entitled to direct allocations of NO_x allowances because the EGU will be considered a "new" budget EGU, as defined in 35 IAC 217.768(a)(1).

ii. A. ~~Thereafter~~After the first control periods, as addressed above, the budget EGU will cease to be "new" budget EGU and the source will be entitled to an allocation of NO_x allowances for the budget EGU as provided in 35 IAC 217.764. For example, for 2010, the allocation of NO_x allowances ~~would~~ will be governed by 35 IAC 217.764(e)(2) and (b)(4).

B. In accordance with 35 IAC 217.762, the theoretical number of NO_x allowances for these budget EGUs, calculated as the product of the applicable NO_x emissions rate and heat input, as follows, shall be the basis for determining the allocation of NO_x allowances to these EGUs:

1. As provided by 35 IAC 217.762(a)(2), the applicable NO_x emission rates for these EGUs is 0.~~08~~ 07 lb/million Btu. This is the permitted emission rates for these EGUs as contained in Condition 2.1.2(b)(iii). The permitted NO_x emission rate is the applicable rate because it is between 0.15 lb/million Btu and 0.055 lb/million Btu, as provided by 35 IAC 217.762(a)(2).

2. The applicable heat input (million Btu/control period) shall be the average of the two highest heat inputs from the control periods four to six years prior to the year for which the allocation is being made, as provided by 35 IAC 217.762(b)(1).

j. Eligibility for NO_x Allowances from the New Source Set-Aside (NSSA)

The Permittee is eligible to obtain NO_x allowances for the budget EGU identified in Condition 3.2(b) from the NSSA, as provided by 35 IAC 217.768, because the budget EGU are "new" budget EGU.

k. Eligibility for Early Reduction Credits

The Permittee is not eligible to request NO_x allowances for the budget EGU identified in Condition 3.2(b) for any early reductions in NO_x emissions, as provided by 35 IAC 217.770.

l. Budget Permit Required by the NO_x Trading Program

i. For this source, this condition of this permit, i.e., Condition 3.2, is the Budget Permit required by the NO_x Trading Program and is intended to contain federally enforceable conditions addressing all applicable NO_x Trading Program requirements. This Budget Permit shall be treated as a complete and segregable portion of this permit, as provided by 35 IAC 217.758(a)(2).

ii. The Permittee and any other owner or operator of this source and each budget EGU at the source shall operate the budget EGU in compliance with this Budget Permit, pursuant to 35 IAC 217.756(b)(2).

iii. No provision of this Budget Permit or the associated application shall be construed as exempting or excluding the Permittee, or other owner or operator and, to the extent applicable, the account representative of a budget source or budget EGU from compliance with any other regulation or requirement promulgated under the Clean Air Act, the Environmental Protection Act, the approved State Implementation Plan, or other federally enforceable permit, pursuant to 35 IAC 217.756(g).

iv. Upon recordation by USEPA, under 40 CFR 96, Subparts F or G, or 35 IAC 217.782, every allocation, transfer, or deduction of an allowance to or from the budget EGUs' compliance accounts or to or from the overdraft account for the budget source is deemed to amend automatically, and become part of, this budget permit, pursuant to 35 IAC 217.756(d)(8). This automatic amendment of this budget permit shall be deemed an operation of law and will not require any further review.

v. No revision of this Budget Permit shall excuse any violation of the requirements of the NO_x Trading Program that occurs prior to the date that the revisions to this permit takes effect, pursuant to 35 IAC 217.756(f)(1).

vi. The Permittee, or other owner or operator of the source, shall reapply for a Budget Permit for the source as required by 35 IAC Part 217, Subpart W and Section 39.5 of the Act. For purposes of the NO_x Trading Program, the application shall contain the information specified by 35 IAC 217.758(b)(2).

SECTION 4: GENERAL PERMIT CONDITIONS

CONDITION 4.1: STANDARD CONDITIONS

Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this project, unless superseded by other conditions in the permit.

CONDITION 4.2: GENERAL REQUIREMENTS FOR EMISSION TESTING

a. i. At least 60 days prior to the actual date of initial emission testing required by this permit, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include at a minimum:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions, e.g., operating rate and control device operating conditions, under which testing shall be performed including a discussion of why these conditions will be representative and the means by which the operating parameters will be determined.

C. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations. As part of this plan, the Permittee may set forth a strategy for performing emission testing in the normal load range of the boiler.

D. The test method(s) that will be used, with the specific analysis method if the method can be used with different analysis methods.

ii. As provided by 35 IAC 283.220(d), the Permittee need not submit a test plan for subsequent emissions testing that will be conducted in accordance with the procedures used for previous tests accepted by the Illinois EPA or the previous test plan submitted to and approved by the Illinois EPA, provided that the Permittee's notification for testing, as required below, contains the information specified by 35 IAC 283.220(d)(1)(A), (B) and (C).

b. i. The Permittee shall notify the Illinois EPA prior to performing emissions testing required by this permit to, enable the Illinois EPA to observe the tests. Notification for the expected date of testing shall be submitted a minimum of 30 days* prior to the expected date, and identify the testing that will be performed. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days* prior to the actual date of testing.

* For a particular test, the Illinois EPA may at its discretion accept shorter advance notification provided that it does not interfere with the Illinois ~~EPA's~~ EPA's ability to observe testing.

ii. This notification shall also identify the parties that will be performing testing and the set or sets of operating conditions under which testing will be performed.

c. Three copies of the Final Reports for emission tests shall be forwarded to the Illinois EPA within 30 days after the test results are compiled and finalized but not later than 90 days after the date of testing. At a minimum, the Final Report for testing shall contain:

i. General information, i.e., testing personnel and test dates;

ii. A summary of results;

iii. Description of test method(s), including a description of sampling points, sampling train, analysis equipment, and test schedule;

iv. The operating conditions of the emission unit and associated control devices during testing; and

v. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

CONDITION 4.3: REQUIREMENTS FOR RECORDS FOR DEVIATIONS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, records for deviations from applicable emission standards and control requirements shall include at least the following information: the date, time and estimated duration of the event; a description of the event; the manner in which the event was identified, if not readily apparent; the probable cause for deviation, if known, including a description of any equipment malfunction/breakdown associated with the event; information on the magnitude of the deviation, including actual emissions or performance in terms of the applicable standard if measured or readily estimated; confirmation that standard procedures were followed or a description of any event-specific corrective actions taken; and a description of any preventative measures taken to prevent future occurrences, if appropriate.

CONDITION 4.4: RETENTION AND AVAILABILITY OF RECORDS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, all records, including written procedures and logs, required by this permit shall be kept at a readily accessible location at the plant and be available for inspection and copying by the Illinois EPA and shall be retained for at least five years.

CONDITION 4.5: NOTIFICATION AND REPORTING OF DEVIATIONS

Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, notifications and reports for deviation from applicable emission standards and control requirements shall include at least the following information: the date and time of the event, a description of the event, information on the magnitude of the deviation, a description of the corrective measures taken, and a description of any preventative measures taken to prevent future occurrences.

CONDITION 4.6: GENERAL REQUIREMENTS FOR NOTIFICATION AND REPORTS

a. i. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA – Air Compliance Section with a copy sent to the Illinois EPA – Air Regional Field Office.

ii. As of the date of issuance of this permit, the addresses of the office that should generally be utilized for the submittal of reports and notifications are as follows:

A. Illinois EPA – Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance and Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

B. Illinois EPA – Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

C. USEPA Region 5 – Air Branch

USEPA (AE-17J)
Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

b. The Permittee shall submit Annual Emission Reports to the Illinois EPA in accordance with 35 IAC Part 254. For hazardous air pollutants, these reports shall include emissions information for at least the following pollutants: hydrogen chloride, hydrogen fluoride, mercury, arsenic, beryllium, cadmium, chromium, lead, manganese, and nickel.

ATTACHMENTS

ATTACHMENT 1: TABLES

Table I

Emission Limitations for ~~Each~~ Coal-Fired Boilers

Pollutant	Individual Boiler			Combined
	Lb/Million Btu[a]	Lb/Hour[b]	Tons/Year[b]	Tons/Year[b]
NO_x	~~0.08[a]~~ 0.07[~~a, e~~]	893, 24-Hour Average[c]	~~2,608~~2,282	~~5,216~~4,564
CO	0.12[~~a, e~~d]	893, 24-Hour Average	3,912	7,824
VOM	0.004[~~a, e~~]	29.8, 3-Hour Average	130	260
SO_2	0.182[a]	3,126, 24-Hour Average[e]	5,933	11,866
PM/PM_{10} [~~d~~]Filterable[f]	0.015[a]	112, 3-Hour Average	490	980
PM_{10} Total	0.035[g]	261, 3-Hour Average[h]	1,143[h]	2,286[h]
Sulfuric Acid Mist	0.005	37.1, 3 Hour Average	162.5	325
~~Fluorides~~[e]Fluorides[i]	0.00026	2.0, 3-Hour Average	8.75	17.5
~~Lead~~[f]Lead[j]	----	0.~~00~~0678, 3-Hour Average	0.~~03~~295	0.~~06~~594
Mercury	----	0.016, 3-Hour Average[k]	0.07	0.14
Beryllium	----	0.0~~0~~085, 3-Hour Average[k]	0.~~0037~~0371	0.~~0074~~0742
Hydrogen Chloride	~~0.0032~~----	24.4, 3-Hour Average[k]	107.0	214.0

Notes:

[a] Compliance with the emission rates expressed in pound/million Btu heat input shall be determined in accordance with the provisions in Condition 2.1.2(b).

[b] These limitations address all emissions from the boiler(s), including emissions that occur during periods of~~Hourly emission limits do not apply during~~ startup, shutdown ~~or~~ and malfunction addressed by ~~Unit Specific~~ Condition 2.1.6.

[c] This limitation does not apply during startup and shutdown. The emissions of NO_x from the boilers during such periods are addressed by the BACT limit for NO_x, which applies as a 30-day average.

[~~e~~d] ~~As an alternative to this limitation expressed in pound/million Btu,~~ This emission rate does not apply for startup or shutdown of a boiler. The emissions of CO from a~~the~~ boiler during such periods are addressed by a~~may comply with the~~ limitation expressed in pounds/hour, 24-hour average basis, which is the product of the design capacity of the boiler, in million Btu/hr, and the otherwise applicable BACT limit in lb/million Btu.

[e] This limitation is reduced to 2,450 lb/hour, daily average, no later than 24 months after initial startup of a boiler, pursuant to Condition 2.1.7(a)(i), and emissions may also be further restricted, pursuant to Condition 2.1.16, Optimization of Daily Control of SO_2 Emissions.

[~~d~~f] All particulate matter (PM) measured by USEPA Method~~,~~ 5 shall be considered PM_{10} unless PM emissions are tested by USEPA Method 201 or 201A, as specified in 35 IAC 212.108(a). These PM limits do not address condensable particulate matter. ~~(Condensable particulate was addressed in the particulate matter air quality impact analysis required by the PSD~~

~~rules. For this purpose, the emission rate for condensable particulate matter was conservatively estimated to be 0.035 lb/million Btu.)~~

g This limit, which addresses both filterable and condensable PM_{10}, is subject to reduction pursuant to Condition 2.1.17, Revision of Total PM_{10} Emission Limit Based on Results of Emission Testing.

h If the limit for total PM_{10} emissions is reduced pursuant to Condition 2.1.17, this limitation shall also be reduced on a pro-rata basis.

~~e~~i The limit for fluorides is expressed in terms of hydrogen fluorides.

~~f~~j The limit for lead is expressed in terms of~~as~~ elemental lead. As this limit is applicable during startup, shutdown and malfunction, compliance shall be determined by engineering analysis and calculations.

k This limit does not apply during periods of startup, shutdown and malfunction, as addressed by Condition 1.4.

TABLE II

Particulate Matter (PM) Emission Limitations for Bulk Material ~~Handling~~ Operations
(Pounds per Hour and Tons per Year)

Emission Units	Application Designation	Pounds/Hour	Tons/Year
Coal/Limestone Receiving ~~and~~ &Handling and Coal Preparation			
Conveyor Unloading, Transfer House, Crusher Building, Hoppers, etc., except as below	EP1, EP2, EP16B, EP41B, EP44, EP45, EP48, EP49, EP50B, EP102, EP105	0.479	2.10
Limestone Reclaim	EP17, EP39	0.156	0.68
Material Storage ~~Buildings~~	EP40A, EP40B, EP40c, EP58, EP 62, EP103	3.411	14.95
Subtotal		4.046	17.73
Limestone Preparation			
Preparation Equipment, ~~and~~ Mill System and Bins	EP75A, EP75B	0.002	0.01
Subtotal		0.002	0.01
Waste and Ash Handling ~~&~~ and Loadout			
Bottom Ash Silos, Transport Systems, Fly Ash Silos, Waste Bin, Etc.	EP14, EP78, EP80, EP107	0.154	0.67
Subtotal		0.154	0.67
Total		4.202	18.4

ATTACHMENT 2: STANDARD PERMIT CONDITIONS

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Illinois EPA and a supplemental written permit issued.

4. The Permittee shall allow any duly authorized agent of the Illinois EPA upon the presentation of credentials, at reasonable times:

   a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,

   b. To have access to and to copy any records required to be kept under the terms and conditions of this permit,

   c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,

   d. To obtain and remove samples of any discharge or emissions of pollutants, and

   e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,

   b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities.

   c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations.

   d. Does not take into consideration or attest to the structural stability of any units or parts of the project, and

   e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.

b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit.

   a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed, or

   b. Upon finding that any standard or special conditions have been violated, or

   c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

ATTACHMENT 3: ACID RAIN PERMIT ~~(DRAFT)~~

217-782-2113

ACID RAIN PROGRAM PERMIT

Prairie State Generating Company, LLC
Attn: Mr. Lars W. Scott, Designated Representative
701 Market Street, Suite 781
St. Louis, Missouri 63010

Oris No.:	55856
Illinois EPA I.D. No.:	189808AAB
Source/Unit:	Prairie State Generating Company, LLC, Units 01 and 02
Date Received:	October 11,2002
Date Issued:	January 14, 2005
Effective Date:	January 1, 2007
Expiration Date:	December 31, 2011

STATEMENT OF BASIS:

In accordance with Section 39.5(17)(b) of the Illinois Environmental Protection Act and Titles IV and V of the Clean Air Act, the Illinois Environmental Protection Agency is issuing this Acid Rain Program permit for the Prairie State Generating Station.

SULFUR DIOXIDE (SO_2) ALLOCATIONS AND NITROGEN OXIDE (NO_x) REQUIREMENTS FOR EACH AFFECTED UNIT:

Unit 01 and Unit 02	SO_2 Allowances	These units are not entitled to an allocation of SO_2 allowances pursuant to 40 CFR Part 73.
	NO_x Emission Limitation	These units are subject to a NO_x emissions limitation under 40 CFR Part 76.

This Acid Rain Program permit contains provisions related to sulfur dioxide (SO_2) emissions and requires the owners and operators to hold SO_2 allowances to account for SO_2 emissions beginning in the year 2000. An allowance is a limited authorization to emit up to one ton of SO_2 during or after a specified calendar year. Although this plant is not eligible for an allowance allocated by USEPA, the owners or operators may obtain SO_2 allowances to cover emissions from other sources under a marketable allowance program. The transfer of allowances to and from a unit account does not necessitate a revision to this permit (See 40 CFR 72.84).

This permit contains provisions related to nitrogen oxide (NO_x) emissions requiring the owners or operators to monitor NO_x emissions from affected units in accordance with the applicable provisions of 40 CFR Part 75.

This Acid Rain Program permit does not authorize the construction and operation of the affected units as such matters are addressed by Titles I and

V of the Clean Air Act. If the construction and operation of one of the affected units is not undertaken, this permit shall not cover such unit.

In addition, notwithstanding the effective date of this permit as specified above, this permit shall not take effect for an individual affected unit until January 1 of the year in which the unit commences operation.

COMMENTS, NOTES AND JUSTIFICATIONS:

This permit does not affect the owners and operators responsibility to meet all other applicable local, state, and federal requirements, including requirements addressing SO_2 and NO_x emissions.

PERMIT APPLICATION:

The SO_2 allowance requirements and other standard requirements as set forth in the application are incorporated by reference into this permit. The owners and operators of this source must comply with the standard requirements and special provisions set forth in the application.

If you have any questions regarding this permit, please contact Shashi Shah at 217/782-2113.

ORIGINAL SIGNED BY DONALD E. SUTTON

Donald E. Sutton, P.E.
Manager, Permits Section
Division of Air Pollution Control

DES:SRS:jar

cc: Cecilia Mijares, USEPA Region V
Illinois EPA Region 3

ATTACHMENT 4:

DETERMINING THE SORBENT INJECTION RATE FOR CONTROL OF MERCURY EMISSIONS FROM THE COAL-FIRED BOILERS

1. Purpose

This attachment contains the requirements for the sorbent injection systems for control of mercury emissions from the coal-fired boilers if the boilers are subject to Condition 2.1.2(c)(ii)(A) and the Permittee elects to comply with Permit Option B, i.e., use of a control system for mercury emissions. Among other matters, this attachment defines the process by which the applicable injection rate of sorbent for such systems will be determined. These requirements are included as an attachment to this permit, rather than in the body of the permit, due to the detailed nature of the requirements and the likelihood that these requirements will never take effect, as the emissions of mercury from the coal-fired boiler are subject to requirements adopted by USEPA pursuant to the Clean Air Act.

2. General Requirements

a. The sorbent injection systems, including the selected sorbent(s) shall be designed, constructed and maintained in accordance with good air pollution control practices. For this purpose, sorbent(s) shall be used, such as treated activated carbon, that have been demonstrated to have high levels of effectiveness in similar boiler/control device applications (or pilot tests on an affected boiler). The systems shall have ample capacity to handle and inject such sorbent(s), and the location, number and type of injection ports designed for effective distribution of sorbent in the flue gas. The Permittee shall submit a demonstration to the Illinois EPA showing that the proposed sorbent injection systems meet these criteria, for review and approval by the Illinois EPA.

b. i. The sorbent injection systems shall each be operated to inject sorbent at a rate, in lb/million Btu or lb/scf of flue gas, that is at least at the rate that has been determined to represent the maximum practicable degree of removal for mercury, as previously established pursuant to an evaluation of the effectiveness of the sorbent for control of mercury conducted in accordance with Condition 3 or 4, below. This rate shall be maintained while coal is being fired in the boiler, including periods of startup and shutdown of the boiler.

ii. Notwithstanding the above, for purposes of evaluating the performance of sorbent(s), the Permittee may operate without the sorbent injection system in service or at low rates of sorbent injection as necessary to (1) to prepare for the formal evaluation of a sorbent, i.e., flushing residual sorbent from the boiler and control train, and (2) determine the "performance curve", provided that the number

and duration of such operation is minimized to the extent reasonably necessary for this purpose. (Refer to Paragraph 5(a), below, for the definition of the performance curve.) The Permittee may also conduct pilot tests to confirm suitability of a potential sorbent prior to a detailed evaluation, with prior notification to the Illinois EPA describing such tests and the available data indicating the suitability of the sorbent material for effective control of mercury.

3. Initial Evaluation of the Effectiveness of Sorbent Injection and Establishment of the Optimum Sorbent Injection Rate

a. The Permittee shall perform an evaluation of the effectiveness of injecting sorbent(s) for control of mercury in accordance with a plan submitted to the Illinois EPA for review and comment.

i. The Permittee shall submit the initial plan to the Illinois EPA no later than 180 days after initial start-up of a boiler.

ii. The Permittee shall promptly begin this evaluation after a boiler demonstrates compliance with all applicable short-term emission limits as shown by emission testing and monitoring. At this time, the Permittee shall submit an update to the plan that describes its findings with respect to control of mercury emissions during the shakedown of the boilers, which highlights possible areas of interest for this evaluation.

iii. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within two years after the initial startup of a boiler. This report shall include proposed injection rate limit(s) for mercury emissions. (See Condition 3(d)(i), below.)

iv. This deadline may be extended by the Illinois EPA for an additional year if the Permittee submits an interim report (1) demonstrating the need for additional data to effectively evaluate sorbent injection and (2) includes an interim limit for mercury injection that provides effective control of mercury.

b. i. If the Permittee is conducting monitoring for mercury emissions with a continuous method, the plan shall provide for systematic review of mercury emissions as related to variation in operation of the boiler, within the normal range of boiler operation, including the effect of (1) boiler load and combustion settings, including excess oxygen, (2) operating data for the SCR system, including the level of uncontrolled NO_x before the SCR, as predicted from boiler operating data, (3) operating data for the scrubber, including pH of the scrubbant, and (4) operating data for the wet WESP. As an alternative to reliance on

the measurements from a continuous monitoring system, the Permittee may also supplement its monitoring with semi-continuous monitoring, as provided below.

ii. If the Permittee is conducting monitoring for mercury emissions with a semi-continuous method, the sampling periods shall be of an appropriate duration to cover a representative selection of operation of the boiler.

c. In conjunction with such measurements of mercury emissions, the Permittee shall sample and analyze the fuel supply to the boiler so that representative data for the mercury content of the fuel supply is available that correlates with emission measurements.

d. i. Unless the Permittee elects to conduct a supplementary investigation, as provided below, the maximum practicable degree of removal shall be injection of sorbent at a rate that is twice the rate at the "transition point" from the performance curve. (Refer to Paragraph 5(b), below, for the definition of the transition point.) The sorbent injection systems shall be operated at this rate.

ii. The Permittee may elect to conduct a supplemental investigation of the effectiveness of injection of sorbent(s) to determine whether effective control of mercury, as generally required, is achieved with lower (or higher) injection rates considering the operating rate or other relevant operating parameters of the boilers or control train, excluding periods of startup and shutdown of boilers. For this purpose, the Permittee shall conduct additional measurements and develop additional performance curves for the control of mercury emissions for the boilers under such operating conditions. In the report for the evaluation, the Permittee shall explain why such operating conditions affect the control of mercury emissions, provide the criteria for identification of such operating conditions, and identify the rates at which the sorbent injection system must be operated during such conditions, determined as twice the rate at the "transition point" on the applicable performance curve.

4. Subsequent Evaluation of the Effectiveness of Sorbent Injection and Adjustment of the Optimum Sorbent Injection Rate

a. The Permittee shall repeat the evaluation described in Condition 3, above, in the following circumstances:

i. If the initial evaluation of sorbent injection does not demonstrate that 90 percent or more overall control of mercury will be achieved, a new evaluation shall be commenced two years after the initial evaluation was completed.

ii. If the Permittee undertakes significant changes to the mercury control system, e.g., use of a different sorbent or changes in the location or type of injection ports, at the conclusion of such changes.

iii. If the Permittee undertakes significant changes to other devices in the control train, e.g., use of a different catalyst in the SCR or changes in the chemistry of the scrubber which would generally act to reduce the effectiveness of those devices in controlling or facilitating the control of mercury emissions, at the conclusion of such changes.

iv. If requested by the Illinois EPA for purposes of periodic confirmation of the effectiveness of sorbent injection, which request shall not be made more than once every five years.

v. If the Permittee elects to perform such evaluation, provided, however that the Permittee shall explain why such an evaluation is being undertaken if it is less than two years after completion of the last evaluation.

b. For the purpose of subsequent evaluation, the plan shall be submitted to the Illinois EPA for review and approval at least 45 days before undertaking changes that trigger the need to perform such an evaluation and the evaluation shall be completed in one year, with opportunity for a 6-month extension.

c. As a subsequent evaluation reassesses the continuing operation of the boilers or addresses the future operation of the boilers, the results of the evaluation shall supersede the results of the preceding evaluation and thereafter govern the operation of the sorbent injection systems. For example, if the subsequent evaluation was performed for a new sorbent material and the boilers continue to be operated with such sorbent, operation shall be governed by the results of the subsequent evaluation. If the new sorbent will not continue to be used, operation shall be governed by the results of the preceding evaluation for the sorbent material that will be used.

5. Definition of Terms As Related to Sorbent Injection for Control of Mercury Emissions

For the purpose of these conditions, the following terms shall apply:

a. The "performance curve" is a graphical representation of the effectiveness of a particular sorbent in controlling mercury emissions, comparing the effectiveness of control with increasing rates of sorbent injection.

A performance curve for injection of a particular sorbent material is established by conducting a series of tests under representative operating conditions of the boiler to measure

mercury emissions at different rates of sorbent injection (typically starting from zero sorbent to high rates of sorbent injection). For the purpose of presenting data, mercury emissions and sorbent injection rates are expressed in terms of the heat input to the boiler, in million or trillion Btu. This accounts for any differences in the heat input during each test.

In conjunction with these measurements of mercury emissions, the coal supply to the boiler is analyzed for its mercury content. This allows the effect of the sorbent to be expressed in terms of control efficiency, calculated from the mercury emissions and the amount of mercury present in the coal entering the boiler. This also addresses any variation in the mercury content of the coal supply to the boiler, so that another potential cause for variation in emissions is directly accounted for. Otherwise, changes in emissions due to variation in mercury content of coal could not be accounted for and would be incorrectly assumed to be due to changes in the rate of sorbent. The resulting data for the relationship between control efficiency for mercury emissions and the sorbent injection rate is then portrayed in graphical form with a trendline that summarizes this relationship and the performance of the particular sorbent for control of emissions.

b. The "transition point" is the theoretical point where the extensions of two straight lines on the performance curve for a particular sorbent, one representing the initial regime for control of mercury emissions and the other representing the terminal regime for control of emissions, would intersect. Effectively, the transition portion on the performance curve prepared from the evaluation of a particular sorbent is simplified to a single point, the "transition point."

In this regard, the performance curves for control of mercury emissions for different sorbent materials and boilers show a consistent form with two different regimes for control effectiveness, an initial regime and a terminal regime, separated by a transition. In the initial regime, there is a relatively strong effect for control of mercury with injection of sorbent. This appears on the left side of the graph, as the trendline starts from the edge of the graph for the level of control for mercury that is achieved without injection of any sorbent. In the terminal regime, there is a much weaker effect for control of mercury by additional injection of sorbent material. This appears on the right side of the graph, as a nearly flat or flat trendline starting from the left side of the graph. In the transition separating the two regimes, the effect of sorbent injection gradually shifts from one regime to the other. Such transitions on graphs of this form are commonly referred to as "shoulders," given the resemblance to a human shoulder.